While the fundamental objective of the activities associated with the Proposed Project is to reestablish the alluvial features of the river, isolated instances of bank erosion may result in the loss of river bank and associated vegetation or, to a lesser extent, constructed features such as wells, utilities, and landscape features. In addition to the Assistance Program for water and sewer, bank stabilization measures, specifically the bio-engineering measures described in Appendix A, are intended to address these impacts on a case-by-case basis, consistent with all federal, state, and local requirements. In concert with the ongoing TRRP and the activities described in Chapter 2 and Appendix A, the Proposed Project is designed to avoid exposing people or structures to a significant risk of injury, death, or loss involving flooding. Therefore, this impact would be less than significant.

3.5 Water Quality

This section describes water quality conditions in the vicinity of the Proposed Project sites along the Trinity River. It also evaluates potential impacts to water quality from implementation of the Proposed Project. The principal components of the TRD are Lewiston Dam, Trinity Dam, and the facilities that divert runoff from the Trinity River watershed to the Sacramento River Basin. Prior to full implementation of the ROD, up to 90 percent of the natural Trinity River flow was diverted, which substantially altered water quality in the Trinity River, particularly its temperature and sediment regimes. Additional information on the affected environment as it relates to water quality is provided in the Trinity River Master EIR, Section 4.5, Water Quality. Information related to this topic is also provided in the Trinity River Master EIR in Section 4.4, Water Resources, and Section 4.6, Fisheries.

3.5.1 Affected Environment/Environmental Setting

The releases from the TRD influence flow volumes and velocities, water quality, and channel geometry downstream of Lewiston Dam. These influences are particularly important to water quality parameters such as temperature, turbidity, and suspended sediments. A dramatic decrease in the abundance of Trinity River coldwater fishes has taken place since the TRD began operation (USFWS and HVT 1999). Water quality in the Trinity River may also be affected by acid mine drainage from abandoned mines and past mining activities, sediment releases from land use practices associated with unstable soils and decomposed granite (e.g., roads, vegetation management, and subdivisions), septic tanks, aboveground and underground storage tanks, and lumber mills (NCRWQCB 2011).

The Proposed Project is subject to compliance with the Water Quality Control Plan for the North Coast Region (Basin Plan; NCRWQCB 2011). The beneficial uses for the Trinity River defined in the Basin Plan are listed in Table 4.5-1 of the Trinity River Master EIR. In addition to municipal and domestic water supply, the beneficial uses affected by the water quality of the Trinity River are primarily those associated with supporting high-quality habitat for fish. Recreation (contact and non-contact) is another important beneficial use potentially affected by various water quality parameters (e.g., sediment and temperature). The Basin Plan identifies both numeric and narrative water quality objectives for the Trinity River. Table 4.5-2 in the Trinity River Master EIR summarizes the water quality objectives for each of the categories that have been established by the Regional Water Board to protect designated beneficial uses.

Temperature

The influence of Trinity Lake and Lewiston Reservoir on downstream conditions diminishes with distance. In general, the greater the release volumes from Lewiston Dam, the less susceptible the river's temperature is to other factors. Releases from the TRD are generally cold (42° to 47° F). These temperatures are transmitted through Lewiston Reservoir to the Trinity River below Lewiston Dam.

Sediment

In 1992, the Environmental Protection Agency (EPA) added the Trinity River to its list of impaired rivers under the provisions of Section 303(d) of the Clean Water Act (CWA) in response to a determination by the State of California that the water quality standards for the river were not being met due to excessive sediment. In 2001, the EPA established a Total Maximum Daily Load for sediment in the river. The Regional Water Board has continued to identify the Trinity River as impaired in subsequent listing cycles. The primary adverse impacts associated with excessive sediment in the Trinity River pertain to degradation of habitat for anadromous salmonids. The restriction of streamflows downstream of the TRD has greatly contributed to the impairment of the Trinity River below Lewiston Dam (EPA 2001). With implementation of ROD flows and placement of coarse sediment in the Lewiston area, local reductions in fine sediment in the river bed have been observed and fish spawning has increased. Recent measurements to compare in-channel fine sediment concentrations pre- and post-ROD flows have indicated that gravel quality and river bed oxygen permeability have increased through the 40-mile reach. The percent fines measured in Trinity River samples at 2001 sites revisited in 2010, was measurably less than found in 2001 (Graham Matthews and Associates 2010).

Local fishermen (e.g., the TRGA) have recently expressed concern that TRRP addition of gravel to the river has resulted in the filling, or partial filling, of fishing holes (adult holding habitat) with gravel. In high flow gravel augmentation areas, primarily Sawmill and Lowden locations, holes have decreased in depth. Furthermore, due to high fishery flows released in spring 2011 (11,000 cfs from Lewiston Dam), riverbed and floodplain gravel have also moved more than in earlier years. While increased erosion and gravel movement during high flow years is to be expected, the TRRP has examined data, collected pre- and post-high flows, to determine the extent and type of change that has occurred on the river's bottom, and a draft summary is in process. The results, in combination with Phase I reporting, will assist the TRRP in determining how to proceed with future gravel augmentation at rehabilitation sites and during high flow augmentation efforts.

Turbidity

The Basin Plan (NCRWQCB 2011) contains water quality objectives to protect present and probable future beneficial uses of water and to protect existing high quality waters of the state. Water quality objectives form the basis for establishment of waste discharge permits. The Basin Plan contains a water quality objective for turbidity that applies to the Trinity River, including the Proposed Project sites. The water quality objective for turbidity states, "Turbidity shall not be increased more than 20 percent above naturally occurring background levels. Allowable zones of dilution within which higher percentages can be tolerated may be defined for specific discharges upon issuance of discharge permits or waiver thereof." An allowable zone of turbidity dilution is an area within water where turbidity discharges may increase the naturally occurring turbidity level by more than 20 percent. An allowable zone of turbidity dilution may only be granted in

waste discharge permits if all beneficial uses (identified in Table 4.5-1 of the Trinity River Master EIR) remain protected.

The turbidity level in a water body is related to the concentration of suspended solids, which are predominantly less than 0.5 millimeter (mm) in diameter. Water clarity has historically been measured as the concentration of suspended solids (mg/L) or more recently as turbidity, which is measured in NTUs. Turbidity generally does not cause acute adverse effects to aquatic organisms unless concentrations are extremely high (Lloyd 1985). Noggle (1978) estimated an acute lethal concentration causing 50 percent mortality of juvenile coho salmon at 1,200 mg per liter (mg/L) during summer (approximately 900 NTU). At relatively high levels, suspended solids can adversely affect the physiology and behavior of aquatic organisms and may suppress photosynthetic activity at the base of food webs, affecting aquatic organisms either directly (e.g., ability to feed) or indirectly (e.g., impact to food supply or spawning substrate) (Alabaster and Lloyd 1980). However, at lower levels, effects of turbidity last as long as the perturbation in clarity and are limited to reducing reactive distance to prey as well as predation risk. For instance, if periods of increased turbidity occur during periods of merganser (fish predator) activity, the turbidity would probably be used as protective cover that would provide an overall benefit to the fish (NCRWQCB 2009). In the lab, benthic feeding success of coho salmon in water with turbidity levels as high as 100 NTU has been found to be at least 70 percent of their feeding success in clear water (Harvey and White 2008). During low flow restoration activities, adult salmon have been observed using the more turbid sections of the river (10 to 15 NTU) as protective cover during their spawning migrations through the Project areas (Gutermuth, pers. obs.). Finally, the Alaska Department of Environmental Conservation (2008) has determined that turbidity levels for protection of aquaculture in flowing conditions may not exceed 25 NTUs above natural conditions, and that this level is protective of fishery resources.

The Trinity River is typically very clear with natural background turbidity levels in the range of 0 to 1 NTU during summer low flow conditions. Due to the very low background concentrations during the summer, turbidity levels immediately downstream of the most carefully planned and implemented in-channel restoration activities will likely be increased by more than 20 percent above background levels, and plumes extending downstream of restoration activities may be visible. However, short-term increases in turbidity levels that occur during permitted restoration activities are generally not considered to be biologically detrimental to aquatic organisms; they are short in duration and fish are able to move away from the activity area. Reduction of these turbidity levels to within 20 percent above background is very expensive if not impossible using BMPs. Monitoring turbidity increases during implementation of previous Trinity River restoration projects has shown that periods of increased turbidity are brief (generally less than 24 hours); turbidity levels have not exceeded 50 NTU at monitoring points located 500 feet downstream and beneficial uses were still protected. In addition, the quantity of fine sediment introduced to the river during low flow restoration activities is typically small.

In contrast, sediment particles between 0.5 mm and 8.0 mm in diameter tend to settle more quickly. These larger sediment particles can decrease the permeability of the channel bed and cover spawning sites, causing negative impacts on the aquatic community (USFWS and HVT 1999). However, as long as the larger sediment particles are only mobilized into the water column from completed restoration activity areas and off-site sources during high flows, the larger sediment

particles will be transported far down-river or deposited on adjacent alluvial features (e.g., floodplains) where these particles contribute to riparian form and function (e.g., plant growth).

Post construction monitoring data from the Indian Creek site and the Canyon Creek suite of sites indicate that downstream turbidity levels may be increased by overland flow during the initial high flow events that occur following completion of construction activities. During high flow spring-time releases from Lewiston Dam (e.g., clear water released from the dam during ROD flows), turbidity levels may be increased by more than 20 percent at monitoring locations 500 feet or more downstream of recently completed channel rehabilitation sites. However, when the high flows are caused by natural storm water runoff in the Trinity River Basin, and the river is already carrying a substantial sediment load (e.g., turbidity greater than 40 NTUs), background levels are generally not increased by more than 20 percent at monitoring locations downstream of recently completed activities. Furthermore, during natural high flow events the relative addition of fine sediment from recently completed channel rehabilitation sites is minimal compared to the sediment load already being transported by the river (Gutermuth, pers. obs.). In both of these high flow scenarios, impacts to the Trinity River from the addition of TRRP related fine sediment is minimal because the materials that increase turbidity levels are maintained in suspension and transported downriver or deposited on the floodplain in the same manner as fine sediment from other sources. In both low flow and high flow scenarios, as long as Project related turbidity level increases are limited in concentration and duration, impacts to aquatic life and beneficial uses are expected to be minimal in comparison to the long-term aquatic habitat benefits that these Projects are designed to create.

Mercury

Another source of potential water quality impairment of the Trinity River is mercury. Although the river is not listed under Section 303(d) of the CWA for mercury impairment, elevated concentrations have been found in water, sediment, and biota (i.e., fish, frogs, and predatory aquatic insects) in the upper Trinity River Basin upstream of Lewiston Dam (USGS, unpublished data). The general significance of mercury as a biological toxin and the likely sources of mercury in regional and local contexts are discussed in Section 4.13, Hazards and Hazardous Materials, of the Trinity River Master EIR.

Early in the planning phases for the mechanical channel rehabilitation projects along the Trinity River, the TRRP recognized the possibility that mercury in placer tailings and/or fluvial fine sediments could be disturbed and mobilized by the rehabilitation activities. USGS monitoring suggests that the alluvial materials that are subject to project-related disturbance contain levels of mercury well below the numeric criteria promulgated by the EPA for priority toxic pollutants. Overall, the USGS assessment of site-specific methylation data suggests that the bioavailability of mercury in the Trinity River and its floodplain is not presently high and would not likely be modified by the Proposed Project.

3.5.2 Environmental Consequences/Impacts and Mitigation Measures

3.5.2.1 Methodology

For the past eight years, the TRRP has implemented a number of channel rehabilitation projects and completed similar activities to those proposed at the Proposed Project sites. While the type and intensity of these activities vary, the effects of the activities on water quality in the Trinity River are well understood. Impacts on water quality were determined by analyzing whether the proposed

modification of the physical features and biological conditions at the Proposed Project sites would comply with Basin Plan objectives for the Trinity River.

3.5.2.2 Significance Criteria

The Proposed Project would result in significant adverse impacts if it would result in any of the following:

- Violations of state or federal numerical water quality standards or state or federal narrative water quality objectives;
- Substantial degradation of water quality, such that existing beneficial uses are precluded specifically because of degraded water quality;
- Violation of any waste discharge requirements and/or Section 401 Certification conditions;
- Substantial alterations of the course of a stream or river in a manner that would result in substantial erosion or siltation onsite or offsite; or
- Violation of site-specific temperature objectives for the Trinity River contained in the Basin Plan (NCRWQCB 2011).

3.5.2.3 Impacts and Mitigation Measures

Table 9 summarizes the potential water quality impacts that would result from the No-Project and Proposed Project alternatives.

Table 9. Summary of Potential Water Quality Impacts for the No-Project and Proposed Project Alternatives

NO-PROJECT ALTERNATIVE	PROPOSED PROJECT	PROPOSED PROJECT WITH MITIGATION
Impact 3.5-1. Construction of the project could result in short-term, temporary increases in turbidity and total suspended solids levels during construction.		
No impact	Significant	Less than significant
Impact 3.5-2. Construction of the project could result in short-term, temporary increases in turbidity and total suspended solids levels following construction.		
No impact	Significant	Less than significant
Impact 3.5-3. Construction of the project could cause contamination of the Trinity River from hazardous materials spills.		
No Impact	Significant	Less than significant
Impact 3.5-4. Construction of the project could result in increased stormwater runoff and subsequent potential for erosion.		
No impact	Less than significant	Not applicable[1]
Impact 3.5-5. Construction and maintenance of the project could result in the degradation of Trinity River beneficial uses identified in the Basin Plan.		
No impact	Significant	Less than significant

[1] Because this potential impact is less than significant, no mitigation is required.

Impact 3.5-1: Construction of the Proposed Project could result in short-term, temporary increases in turbidity and total suspended solids levels during construction.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, no construction-related short-term increases in turbidity or total suspended solids levels would occur because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

The activities described in Chapter 2 for the Proposed Project would temporarily increase turbidity and total suspended solids in the Trinity River. The incorporation of design elements and construction criteria described in Appendix A (e.g., in-river construction, water pollution prevention, and construction schedules) are intended to limit the total addition of fine suspended sediment to the Trinity River. Additionally, river's edge and in-channel construction activities would be staged to minimize the potential turbidity effects. During in-channel construction activities, increases in turbidity levels could occur because of excavation of alluvial material. Connection of isolated and newly constructed side channels with the mainstem (e.g., the first flush of flowing water) would result in short-term increases in turbidity levels as this material is removed from and/or redistributed within the channel. Fine sediments may be suspended in the river for several hours following construction activities. The extent of downstream sedimentation would be a function of the size and mobility of the substrate. For example, fine-grained sediments like silts and clays can be carried several thousand feet downstream of construction zones, while larger-sized sediments like coarse sands and gravels tend to drop out of the water column within several feet of the construction zone. Collectively, the activities included in the Proposed Project could result in short-term increases in turbidity and suspended solids concentrations in the water column that could potentially violate the Basin Plan objectives for turbidity in the Trinity River. Short-term increases in turbidity and suspended solids levels during construction would be a significant impact.

The temporary crossings at the Douglas City site would provide access for in-channel work areas (IC-5 and IC-6) as well as access to river right work areas. At the Lorenz Gulch site, the X-1 low-flow channel crossing would provide access to river left work areas. The low-flow channel crossings would be constructed of appropriately sized alluvial materials. Placement of alluvial fill materials could temporarily increase turbidity and suspended materials during and immediately following crossing construction. Removal and distribution of alluvial materials upon deconstruction of the low-flow channel could also increase turbidity and suspended materials during and immediately following excavation.

MITIGATION MEASURES

Construction of the Proposed Project could result in short-term, temporary increases in turbidity and total suspended solids levels during construction. Therefore, mitigation measures 4.5-1a, 4.5-1b, 4.5-1c, 4.5-1d, and 4.5-1e described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of the specified mitigation measures would reduce the impacts to less than significant.

Impact 3.5-2: Construction of the Proposed Project could result in short-term, temporary increases in turbidity and total suspended solids levels following construction.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, no short-term increases in turbidity or total suspended solids levels would occur following construction because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

The character and location of alluvial features associated with the Trinity River were modified by the construction and operation of the TRD in response to changes in the flow and sediment regimes, particularly the loss of scouring associated with peak flows. Modification or reconstruction of these alluvial features at strategic locations would promote the river processes necessary for the restoration and maintenance of Trinity River alternate bars, thereby enhancing salmonid rearing habitat. These activities would also increase the habitat available for salmonid rearing under various flows.

Implementing the Proposed Project would increase turbidity and total suspended solids in the river and fluvial surfaces following construction. These increases in turbidity levels would occur when newly disturbed areas are exposed to elevated river stages during high river flows. Fine sediments may be suspended in the river for several hours following such exposure and erosion. The extent of downstream sedimentation would be a function of the rainfall intensity and/or instream flow velocity, as well as the particle size of exposed sediments. Lower intensity rainfalls would be unlikely to mobilize fine sediments because precipitation would be absorbed. If fine sediments are mobilized by flow over newly disturbed areas, they could be carried several thousand feet downstream of the activity areas, while larger sized sediments, such as sands and gravels, would tend to drop out of the water column within several feet of the activity areas.

Post-construction exposure of sediments to rainfall and/or flows would result in short-term increases in turbidity and suspended solids concentrations in the water column that could potentially be in violation of the Basin Plan turbidity objective for the Trinity River. A short-term increase in turbidity and suspended solids levels following construction would be a significant impact.

MITIGATION MEASURES

Construction of the Proposed Project could result in short-term, temporary increases in turbidity and total suspended solids levels following construction. Therefore, mitigation measures 4.5-2a, 4.5-2b, and 4.5-2c described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of the specified mitigation measures would reduce the impacts to less than significant.

Impact 3.5-3: Construction of the Proposed Project could cause contamination of the Trinity River from hazardous materials spills.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, no construction-related contamination of the Trinity River from spills of hazardous materials would occur because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

Construction staging activities could result in a spill of hazardous materials (e.g., oil, grease, gasoline, and solvents) into the Trinity River. In addition, operation of construction equipment in or adjacent to the river would increase the risk of a spill of hazardous materials into the river (e.g., from leaking of fluids from construction equipment). Spills of hazardous materials into or adjacent to the Trinity River could degrade water quality and have deleterious effects on salmonids of any life stage that are in close proximity to construction activities. Section 3.13, Hazards and Hazardous Materials, evaluates potential effects associated with exposing the public to hazards associated with the transportation and use of hazardous materials at the rehabilitation sites. Additional requirements outlined in Appendix A would be incorporated into the Project to reduce the potential impact. However, construction activities could result in a spill of hazardous material, which would be a significant impact.

MITIGATION MEASURES

Construction of the Proposed Project could cause contamination of the Trinity River from hazardous materials spills. Therefore, mitigation measures 4.5-3a, 4.5-3b, and 4.5-3c described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of these mitigation measures would reduce the impacts to less than significant.

Impact 3.5-4: Construction and maintenance of the Proposed Project could result in increased stormwater runoff and subsequent potential for erosion.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, there would be no increases in stormwater runoff and the potential for subsequent erosion because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

Implementation of the Proposed Project, including those measures described in Appendix A, would not result in an increase in impervious surface areas (e.g., structures and roadway approaches) that could subsequently generate additional stormwater runoff and potential for erosion. Grading activities, including the use of rippers during grading activities, are expected to eliminate surface runoff during the first year after construction. Access routes would be located on gentle terrain and would require minimal grading. The impact associated with runoff and erosion would, therefore, be less than significant.

Impact 3.5-5: Construction and maintenance of the Proposed Project could result in the degradation of Trinity River beneficial uses identified in the Basin Plan.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, no degradation of Trinity River beneficial uses would occur because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

Under the Proposed Project, significant impacts to beneficial uses of the Trinity River could occur in the following categories of water quality objectives listed in the Basin Plan:

- Sediment;

- Toxicity;
- Turbidity;
- Settleable material;
- Suspended material; and
- Chemical constituents.

Under the Proposed Project, the impacts would be associated with in-channel work including the placement and deconstruction of the low-flow channel crossings (i.e., X-1, X-2, and X-3 at Douglas City and X-1 at Lorenz Gulch). Although the design elements and construction methods described in Appendix A are intended to minimize these impacts, the activities associated with construction, particularly in riverine and in-channel activity areas, would result in significant impacts.

MITIGATION MEASURES

Construction and maintenance of the Proposed Project could result in the degradation of Trinity River beneficial uses identified in the Basin Plan. Therefore, mitigation measures identified above for Impacts 3.5-1, 3.5-2, and 3.5-3 and described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of the specified mitigation measures would reduce the impacts to less than significant.

3.6 Fishery Resources

This section describes the fishery resources and aquatic habitats that are known to occur within the boundaries of the sites and evaluates the impacts of the Proposed Project on these resources. The TRFEFR (USFWS and HVT 1999) determined that lack of spawning and rearing habitat for juvenile salmonids is likely a primary factor in limiting the recovery of salmonid populations in the Trinity River. Activities at the Proposed Project sites are specifically designed to increase the abundance of habitat for Trinity River salmonids by reconnecting the river with its floodplain, increasing channel sinuosity, and providing shallow low velocity habitats in close proximity to the river's edge. The discussion of fisheries resources is based on a focused literature review, informal consultation with resource agencies, and observations made during site visits. These resources are discussed in the Trinity River Master EIR (Section 4.6 and Appendix G). The Magnuson-Stevens Fishery Conservation and Management Act (MSA) and Essential Fish Habitat (EFH) are also described in the Master EIR (Section 4.6).

3.6.1 Affected Environment/Environmental Setting

3.6.1.1 Native Anadromous Fish Species

The native anadromous species of interest in the mainstem Trinity River and its tributaries are Chinook salmon (*Oncorhynchus tshawytscha*), coho salmon (*Oncorhynchus kisutch*), steelhead (*Oncorhynchus mykiss irideus*) and Pacific lamprey (*Entosphenus tridentatus*). There are two spawning races of Chinook salmon (spring- and fall-run) and two spawning races of steelhead (winter- and summer-run). The life histories and fresh water habitat requirements of these and other species and their distinct spawning populations are described in Appendix G of the Trinity River Master EIR.

3.6.1.2 Resident Native and Non-Native Fish Species

Resident native fish species found in the Trinity River Basin include game fish such as rainbow trout (*Oncorhynchus mykiss*) and non-game fish such as speckled dace (*Rhinichthys osculus*), Klamath

smallscale sucker (*Catostomus rimiculus*), Klamath River lamprey (*Lampetra similis*), three-spined stickleback (*Gasterosteus aculeatus*), coast range sculpin (*Cottus aleuticus*), and marbled sculpin (*Cottus klamathensis*). The abundance of resident native species and the factors affecting their abundance within the basin are not well understood; however, all these species evolved and existed in the Trinity River prior to the TRD and are presumably adapted to those conditions.

Non-native fish species found in the Trinity and Klamath River Basins include American shad (*Alosa sapidissima*), brown bullhead (*Ameiurus nebulosus*), green sunfish (*Lepomis cyanellus*), brown trout (*Salmo trutta*), and brook trout (*Salvelinus fontinalis*) (USFWS, unpublished data). American shad occur in the lowermost portions of the Trinity River Basin, but are primarily found in the Lower Klamath River Basin. Anadromous brown trout were propagated in the Trinity River Salmon and Steelhead Hatchery until 1977, when this practice was discontinued because of small numbers and the lack of anadromous characteristics of fish entering the hatchery. Currently, brown trout are largely limited to the upper portions of the river, although some brown trout exhibit anadromous characteristics. Brook trout provide a significant sport fishery in the tributary streams and high-elevation lakes of the Trinity River Basin. Its life cycle and habitat requirements are similar to those of brown trout. The structure and abundance of populations of these species in the Trinity and Lower Klamath River Basins are unknown.

3.6.1.3 Special Status Species

Special status fish species with the potential to occur at rehabilitation sites in the Trinity River are discussed in the Trinity River Master EIR (Section 4.6 and Appendix G) and are summarized below.

COHO SALMON

The Southern Oregon/Northern California Coasts (SONCC) Evolutionarily Significant Unit (ESU) of coho salmon was listed as threatened pursuant to the federal Endangered Species Act (ESA) on April 25, 1997. This listing includes coho salmon from the Trinity River and Klamath River Basins. Critical habitat for the SONCC ESU coho salmon was designated on May 5, 1999; in the Trinity River Basin, designated critical habitat for this species consists of the water, substrate, and adjacent riparian zone of those estuarine and riverine reaches (including off-channel habitats and accessible tributaries) downstream of Lewiston Dam (CFR Vol. 64, No. 86, May 5, 1999). The 2000 Biological Opinion on the Trinity River Mainstem Fishery Restoration EIS (NMFS 2000) found that the program *"is not likely to jeopardize the continued existence of the [SONCC ESU] coho salmon"*, and *"is not likely to destroy or adversely modify critical habitat for the [SONCC ESU] coho salmon."*

Both Reclamation's 2000 Biological Assessment and NMFS' subsequent 2000 Biological Opinion acknowledged that construction at channel rehabilitation projects would not occur "within the wetted channel." However, in-channel work would occur related to proposed activities at the Proposed Project sites. After considerable restoration planning and design work by TRRP staff, NMFS, with support from the TMC, now considers in-channel work a necessary component to successfully carry out and achieve program goals and objectives as detailed in the ROD. The TRRP concluded that reinitiation of formal consultation under Section 7 of the ESA was not warranted because effects to SONCC coho salmon were consistent with and not likely to rise above those that were considered in the original 2000 Biological Opinion. In May 2006, NMFS concurred that reinitiation of formal consultation was not warranted if bank rehabilitation activities were authorized within the wetted channel (NMFS 2006).

STEELHEAD

The KMP ESU of steelhead, which includes stocks from the Trinity River, was proposed for federal listing as threatened on March 16, 1995; however, on February 7, 1998, NMFS determined that the population did not warrant threatened status, but that it did warrant candidate status (as defined by NMFS). Subsequent information on the KMP ESU steelhead was evaluated and NMFS made a final listing determination that the ESU did not warrant listing in April 2001 (CFR Vol. 66, No. 65). The summer-run population segment of this ESU remains a California Species of Special Concern, as well as a USFS sensitive species (Moyle et al. 1995; USFWS 1995).

CHINOOK

Similarly, in a 1998 status review of all west coast Chinook salmon stocks (Myers et al. 1998), the Upper Klamath-Trinity Rivers ESU Chinook salmon was determined to not warrant listing as a threatened or endangered species. However, spring-run Chinook salmon within the Klamath-Trinity Basin is a California Species of Special Concern (Moyle et al. 1995).

PACIFIC LAMPREY

The Pacific lamprey, along with three other lamprey species, was petitioned for federal listing in 2003. On December 27, 2004, the USFWS announced that the petition along with additional information does not present substantial scientific or commercial information indicating that listing of these species may be warranted (CFR Vol. 64, No. 86, December 27, 2004). BLM lists the Pacific lamprey as a sensitive species (USDI BLM 2008).

LOCAL AQUATIC HABITAT

The aquatic environment in the general vicinity of the Proposed Project sites is characterized by a sequence of aquatic mesohabitat types. Each of these habitat types consists of distinctive combinations of depth, water velocity, water temperature, cover, substrate composition (bedrock, cobble, gravel, sand, silt, etc.), and adjacent riparian vegetation. Figures 8 and 9 illustrate aquatic mesohabitat as qualitatively defined by the USFWS in a 2002 survey.

In general, moderate slope (near riffle) and low slope (glide) areas equate to faster reaches than deep pools, and runs, which are intermediate in depth. A low slope area may alternatively be named a glide and moderate slope areas (near riffle) often include aerated waters. Riparian vegetation directly adjacent to the river is referred to as shaded riverine aquatic (SRA) habitat and is included as a component of designated critical habitat for coho salmon, as well as a component of EFH for both coho and Chinook salmon. Juvenile coho are expected to utilize suitable habitats in the 40-mile reach of the mainstem Trinity River below Lewiston Dam year-round (NCRWQCB and Reclamation 2009). Pool habitat associated with boulders and LWD is particularly preferred by rearing coho salmon (Hassler 1987; Sandercock 1991; Moyle 2002).

In 2003, a radio-telemetry study of migration and behavioral thermoregulation of adult spring-run Chinook salmon was conducted in the upper Trinity River (Marine and Lyons 2004). Tagged fish used available run and glide habitats that were typically large (surface area) and offered depths up to 4 feet. These habitats held fish for longer periods than other portions of the study reach.

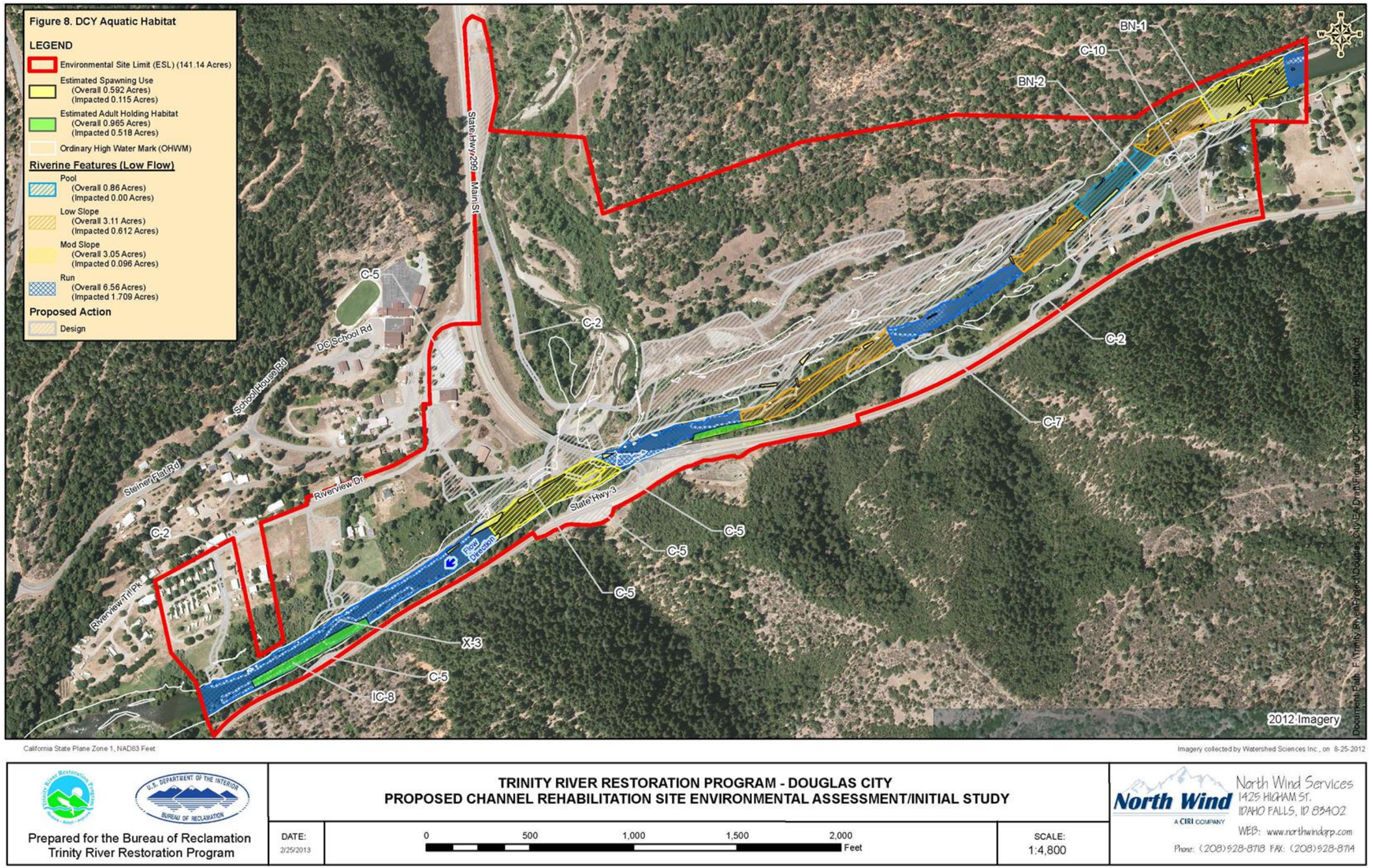

Figure 8. Aquatic Habitat and Potential Project Impacts at the Douglas City Rehabilitation Site

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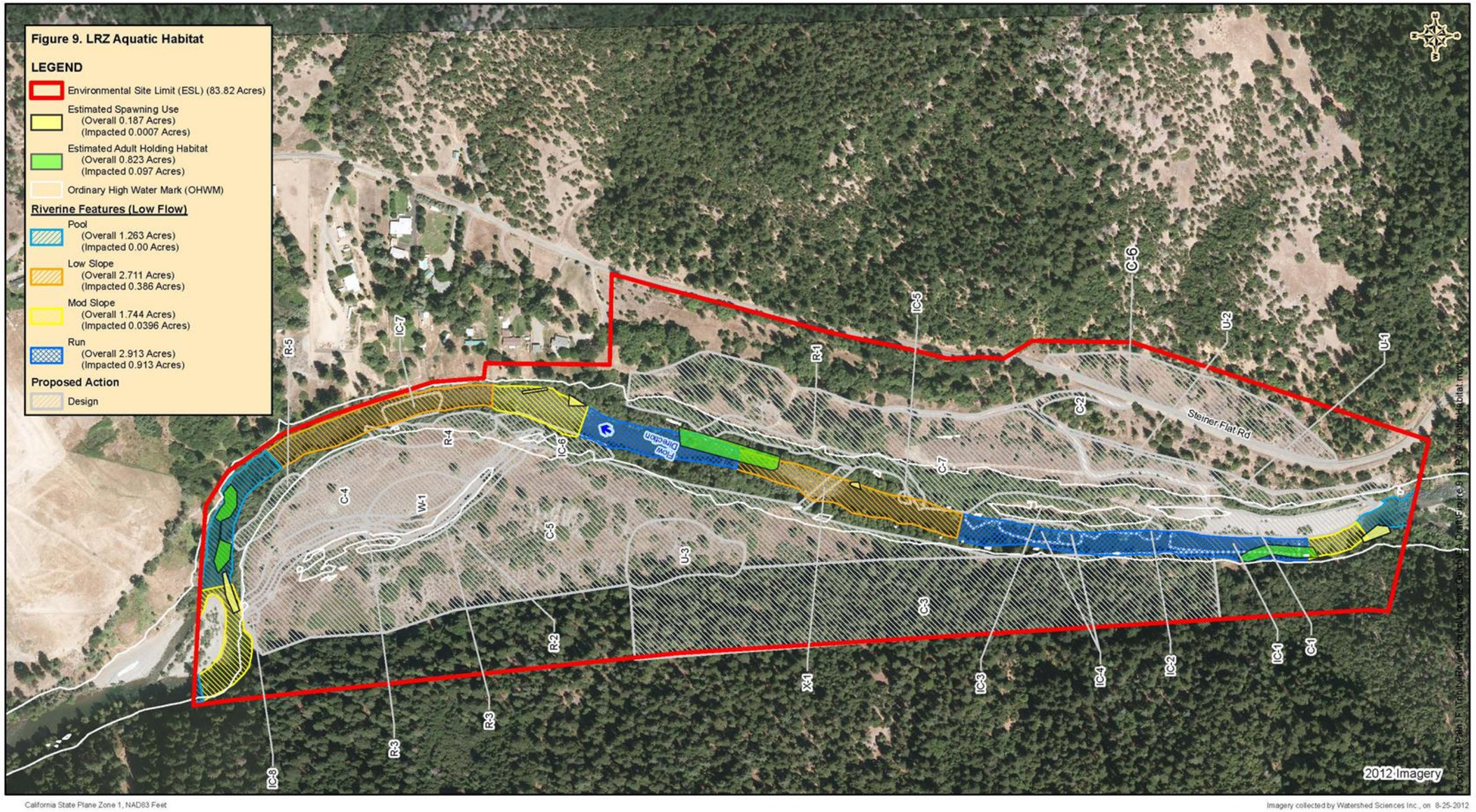

Figure 9. Aquatic Habitat and Potential Project Impacts at the Lorenz Gulch Rehabilitation Site.

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Adult summer/fall-run steelhead migrate to, and hold in, the deeper pools, runs, and glides along the river between April and January (Leidy and Leidy 1984; Moyle 2002). These fish are active throughout the salmon spawning season, and migrate to the upper-most river reaches and into tributaries to spawn from February through April. Winter-run steelheads migrate to spawning grounds from November through April and spawn during the same time as the summer/fall run. Suitable steelhead spawning habitat occurs in riffles throughout the river. Suitable juvenile steelhead rearing habitat also occurs in the river. Fry and juvenile steelhead of both runs may be expected in the riffles and run/pool habitats year-round, especially those associated with abundant SRA and large cobble/boulder habitat, including LWD (Hampton 1988; Moyle 2002).

The proposed rehabilitation sites are located downstream of several major tributaries, including Weaver, Indian, and Reading creeks. These tributaries provide water and sediment to the mainstem year-round, but especially during winter floods. Flows in this reach are measured by the USGS stream gage at Douglas City (#11525854). According to the channel design guide (HVT et al. 2010), the representative summer baseflow for the Douglas City reach (based on data from water year 2000 to 2009) is 479 cfs, of which 450 cfs is released from Lewiston Dam and 29 cfs is from tributary inflow. The winter baseflow in the reach varies from 450 cfs (dry year) to 950 cfs (extremely wet year), and averages 520 cfs during a "normal" year. The estimated spring flows at the reach, including ROD releases from Lewiston Dam, range from 4,723 cfs (including 4,500 cfs from Lewiston Dam) in a dry year, to 6,215 cfs (6,000 cfs from the dam) in a "normal" year, to 11,935 cfs (11,000 cfs from the dam) in an "extremely wet year" (CH2MHill 2011).

The mainstem channel surface substrate between RM 93.9 and RM 94.2 at the Douglas City site is gravel and cobble, while the channel between RM 93.5 and 93.9 is primarily cobble and boulders with many boulders exceeding 2 feet in diameter. The channel upstream of RM 94.2 is primarily gravel and cobble (HVT et al. 2013). A recent tributary event early in December of 2012 moved the Weaver Creek confluence with the Trinity River approximately 100 feet upstream, depositing a large right bank bar downstream. The bank on river left just downstream of the Douglas City Bridge is comprised of gravel and cobble between the top of the bank and toe of the channel while the river right bank further downstream is characterized as gravel and cobble between the top of bank and toe of the channel with interspersed large boulders along the toe of the channel in excess of 2 feet in diameter.

Suitable spawning habitat for anadromous salmonids occurs in most riffles, particularly in low-slope riffles and tail-outs of pools and deep run/glide habitats. Salmon spawning surveys in the upper Trinity River conducted annually by the CDFW (in cooperation with the YT, USFWS, and USFS) report that the greatest concentration of Chinook and coho salmon spawning occurs in the upper survey sections, which range from Lewiston Dam to Old Lewiston Bridge and Old Lewiston Bridge to Bucktail Bridge.

The Trinity River downstream of the Douglas City Bridge is a relatively uniform channel with high velocities. The geometric conditions upstream of the bridge are less uniform with some channel sinuosity and a side channel. The Douglas City reach currently contains 174,756.3 ft^2 of spawning habitat at low flow (450 cfs) and 66,653.5 ft^2 at higher flow (1,500 cfs); 33,390.6 $ft^2$of fry habitat at low flow and 27,737.1 ft^2 at high flow; 65,071.9 ft^2 of presmolt habitat at low flow and 42,806.0 ft^2 at high

flow; and 519.0 ft^2 of adult holding habitat at low flow and 20,537.6 ft^2 at high flow (HVT et al. 2013).

Existing fry habitat within the Lorenz Gulch reach is 99,268 ft^2 at low flow (450 cfs) and 22,568 at higher flow (2,000 cfs). Existing juvenile habitat is 364,968 ft^2 at low flow and 200,368 ft^2 at the higher flow. Spawning utilization by salmonids is minimal throughout the Lorenz Gulch site. Overall throughout the reach there are an estimated 0.180 acres of spawning use and 0.823 acres of adult holding habitat. In 2009, only four redds were observed within the Project reach. Three of these were located in the last pool tail at the downstream end of the site. The lack of spawning could be attributed to poor quality spawning gravel. A run in the middle of the site provides good steelhead holding and fishing opportunities, and the pool near the downstream end of the site offers excellent salmon and steelhead holding (Yurok Tribe Fisheries Program 2011).

HABITAT CONDITIONS

Construction and operation of the TRD, combined with watershed erosion, large-scale gold dredging, and other human-caused disturbances, have resulted in major changes in habitat conditions in the Trinity River. Factors that have resulted in adverse effects on fish habitat include:

- Obstruction to river reaches upstream of the TRD (Lewiston Dam);
- Changes to quantity and timing of flows;
- Changes in channel geomorphology;
- Changes in substrate composition caused by the addition of fine sediments and restriction of gravel recruitment; and
- Changes in water temperature.

These factors are addressed in other sections of this document, specifically Section 3.3, Geology, Fluvial Geomorphology, and Soils; Section 3.4, Water Resources; and Section 3.5, Water Quality, as well as in the respective sections of the Trinity River Master EIR. The relationship between these factors and fish is summarized in the following paragraphs.

The TRD blocked access to 59 miles of Chinook salmon habitat, 109 miles of steelhead habitat, and an undetermined amount of coho salmon habitat (USFWS 1994). Much of this habitat is thought to have been prime spawning and rearing habitat. In the case of Chinook salmon, it represented about 50 percent of the suitable spawning habitat in the upper Trinity River Basin. As early as 1980, the overall decline in spawning habitat was estimated at 80 to 90 percent (USFWS 1980). Furthermore, the blocking of salmon access to upstream reaches greatly reduced the diversity of habitats available to salmon in the Trinity River.

For the first 21 years of TRD operations (1964 to 1985), Lewiston Dam releases to the Trinity River averaged only 21 percent of the natural river inflow. The reduction in flows led to a reduction in habitat and declining quality in the remaining habitat. For example, spawning habitat losses in the mainstem Trinity River below the Grass Valley Creek confluence have been estimated to be 80 percent in the first 2 miles and up to 50 percent overall in the 6 miles downstream of that confluence (USFWS 1994).

The altered patterns of fluvial geomorphic processes in the upper Trinity River have resulted in a reduction in the number of alternate gravel bar sequences with a resultant change in substrate quality and a loss of important salmonid habitats associated with the alternate bars (e.g., pools,

riffles, open gravel/cobble bars, and slack-water habitats). Additionally, functional side-channel habitat has also been affected by modifications to alluvial deposits.

Changes in substrate composition occur in conjunction with upland and riverine processes. The construction and operation of the TRD have modified the sediment regime of the mainstem Trinity River, particularly the 40-mile reach below Lewiston Dam. The thermal environment of the Trinity River has also changed as a combined result of the construction and operation of the TRD and the subsequently altered geomorphic patterns of the river downstream. In comparison to pre-TRD conditions, water temperatures below Lewiston Dam today are cooler in the summer and warmer in the winter.

HABITAT RESTORATION PROJECTS

Since the early 1980s, the Trinity River Basin Fish and Wildlife Restoration Program have conducted a variety of restoration activities in the mainstem Trinity River and its tributaries. Restoration activities in the mainstem Trinity River have included coarse sediment (spawning gravel) supplementation, pool dredging to remove fine sediment and restore valuable holding habitat and construction of several channel rehabilitation projects (side channels and bank rehabilitation of point bars).

From 1990 through 1993, the Trinity River Basin Fish and Wildlife Restoration Program constructed 29 channel rehabilitation projects on the mainstem Trinity River between Lewiston Dam and the North Fork Trinity River, 20 side-channel projects, and nine bank rehabilitation projects (also known as feathered-edge projects). Monitoring of the previous channel rehabilitation projects has documented Chinook salmon spawning within the constructed side-channels and along some "feathered-edge" sites (NCRWQCB and Reclamation 2009; USFWS, unpublished data). An evaluation of the monitoring results associated with early restoration efforts concluded that "when properly constructed, bank rehabilitation can effectively increase the amount of salmonid fry rearing habitat in the Trinity River" (USFWS and HVT 1999).

3.6.2 Environmental Consequences/Impacts and Mitigation Measures

3.6.2.1 Methodology

The analytic methods used to assess potential impacts of the Proposed Project on fisheries resources included a comprehensive literature search and focused field surveys. Evaluation of the presence of special status fish species and sensitive habitats within the boundaries of the site was conducted by performing a database search of the California Natural Diversity Database (CNDDB), informally consulting with resource agencies (e.g., CDFW, NMFS, and USFWS), and reviewing environmental documents and technical studies prepared for projects in the vicinity. Aquatic habitat within the 40-mile reach below Lewiston Dam was identified and characterized based on the USFWS mesohabitat delineations map, reconnaissance-level site visits, consultation with local fishery biologists, and review of pertinent literature and data. These efforts were conducted to provide an overview of the quality and character of potential suitable spawning, holding, and rearing habitat present within these reaches.

3.6.2.2 Significance Criteria

Significance criteria used to assess the potential impacts of the Proposed Project on fisheries resources are based on the current scientific understanding of the biological requirements and

ecological status of the species of interest, and the regulatory standards of county, state, and federal agencies, including the CEQA Guidelines. A significant impact on anadromous salmonids and other native fish would occur if the Project would result in any of the following:

- Potential to substantially reduce the number or restrict the range of an endangered or threatened native fish species or a native fish species that is a candidate for state listing or proposed for federal listing as endangered or threatened;
- Potential for substantial reductions in the habitat of any native fish species other than those that are listed as endangered or threatened or are candidates or proposed for endangered or threatened status;
- Potential for causing a native fish population to drop below self-sustaining levels;
- Substantial adverse effect, either directly or through habitat modifications, on any native anadromous species identified as a sensitive or special status fish species in local or regional plans, policies, or regulations;
- Substantial interference with the movement of any native anadromous or resident fish species;
- A conflict with, or violation of, the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan relating to the protection of native anadromous species or resident fish species;
- Mortality of state or federally listed fish species, or species that are candidates for listing or proposed for listing;
- Reductions in the size of the population of a native fish species sufficient to jeopardize its long-term persistence;
- Temporary impacts to habitats such that native fish species suffer increased mortality or lowered reproductive success that jeopardizes the long-term persistence of those local populations;
- Permanent loss of designated critical habitat and/or essential habitat of a listed species or special status native fish species; or
- Reduction in the quantity or quality of habitats in which native fish species populations occur sufficient to reduce the long-term abundance and productivity of local populations.

3.6.2.3 Impacts and Mitigation Measures

Table 10 summarizes the potential fisheries impacts that would result from the No-Project and Proposed Project alternatives.

Table 10. Summary of Potential Fishery Resource Impacts for the No-Project and Proposed Project Alternatives

NO-PROJECT ALTERNATIVE	PROPOSED PROJECT	PROPOSED PROJECT WITH MITIGATION
Impact 3.6-1. Implementation of the project could result in effects on potential spawning and rearing habitat for anadromous fishes, including the federally and state-listed coho salmon.		
No impact	Significant	Less than significant
Impact 3.6-2. Implementation of the project could result in increased erosion and sedimentation that could adversely affect fishes, including the federally and state-listed coho salmon.		
No impact	Significant	Less than significant

Table 10. Summary of Potential Fishery Resource Impacts for the No-Project and Proposed Project Alternatives		
NO-PROJECT ALTERNATIVE	**PROPOSED PROJECT**	**PROPOSED PROJECT WITH MITIGATION**
Impact 3.6-3. Construction activities associated with the project could potentially result in the accidental spill of hazardous materials that could adversely affect fishes, including the federally and state-listed coho salmon.		
No impact	Significant	Less than significant
Impact 3.6-4. Construction activities associated with the project could result in the mortality of rearing fishes, including the federally and state-listed coho salmon.		
No impact	Significant	Less than significant
Impact 3.6-5. Implementation of the project would result in the permanent and temporary loss of SRA habitat for anadromous salmonids.		
No impact	Significant	Less than significant
Impact 3.6-6. Implementation of the project would result in fish passage being temporarily impaired during the in-stream construction phase.		
No impact	Significant	Less than significant

Impact 3.6-1: Implementation of the Proposed Project could result in effects on potential spawning and rearing habitat for anadromous fishes, including the federally and state-listed coho salmon.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, there would be no effects on spawning and rearing habitat other than those associated with current ongoing actions because the Project would not be constructed. As described in Chapter 1, the TRRP and other entities have been implementing channel rehabilitation projects for several years. These projects continue to affect the Trinity River with regards to flows, sediments, channel morphology, and riparian vegetation. These effects would continue to influence the spawning and rearing habitat for anadromous fishes, irrespective of this alternative. Under this alternative, there would be no impact.

PROPOSED PROJECT

Implementation of the Proposed Project would add conveyance capacity to the Douglas City site upstream of the Douglas City Bridge and add sinuosity downstream of the bridge. Activity areas IC-5 and IC-6 would increase hydraulic and escape cover for juvenile Chinook and coho salmon, and steelhead; increase summer rearing habitat in the form of feeding stations and cover elements for juvenile salmonids; and increase potential creation of salmonid spawning sites through local scour and subsequent downstream deposition of gravel. Overall the Project would decrease adult spawning habitat area compared to existing conditions by 14 percent at 450 cfs and by 28 percent for 1,500 cfs, but would increase adult holding habitat by 93 percent for flows of 450 cfs and 153 percent for flows of 1,500 cfs. Chinook fry rearing habitat would be increased over existing conditions by 91 percent at 450 cfs and 45 percent for a flow of 1,500 cfs and Chinook pre-smolt rearing habitat would be increased over existing conditions by 50 percent at 450 cfs and 58 percent at 1,500 cfs (HVT et al. 2013). The Douglas City wood structures are intended to affect local hydraulics to enhance geomorphic complexity and habitat diversity. Large wood placement in this reach (e.g., IC-4) is expected to further increase fry and pre-smolt rearing habitat for all flows. The small wood habitat structures are intended to provide additional cover for salmonids within constructed habitat features (side channels, swales, alcoves, and rearing ponds). They would be

placed in close proximity to reduce distance to cover and improve rearing habitat. They are typically made up of approximately five large wood pieces with several racked members, and they would be partially backfilled with woody slash and native alluvium.

Features proposed at the Lorenz Gulch site would have beneficial effects on fisheries that include the following. The IC-2 large wood structure would provide immediate creation of cover and eddy zones that increase and enhance areas suitable for salmonid rearing. There would be an anticipated local increase in holding habitat in areas of scour. The IC-3/IC-4 split flow channel complex would create additional area for fry and juvenile rearing by effectively doubling the length of wetted edge throughout the footprint of the structure, providing additional cover, and increasing hydraulic variability over existing conditions. The R-1 low flow side channel would increase fry and juvenile rearing habitat availability over all flow levels. The IC-6 berm removal would provide some additional shallow wetted edge at intermediate flows, with cover developing over time that would enhance spawning on the nearby riffle due to deposition of smaller gravel. The IC-1 and IC-7 boulder placement areas would result in localized variation in hydraulics and creation of "pocket water" that would produce small holding areas for adult fish. The R-4 floodplain work would increase rearing habitat area and hydraulic refugia at all flows, with the largest increases occurring when discharge is greater than 4,500 cfs. The R-3 floodplain work would increase suitable area for fry and juvenile rearing during flood events. Over a longer timescale, the floodplain would contribute allocthanous inputs to the aquatic ecosystem. The W-1 pond would provide connected rearing habitat and refugia during peak events, as well as year-round off-channel rearing habitat. The R-2 hyporheic side channel would provide additional fry and juvenile rearing habitat at all flows. Overall, the Proposed Project would increase fry habitat by 27 percent at low flow conditions (450 cfs) and 247 percent at higher flow conditions (2,000 cfs). Juvenile habitat would be increased by 9 percent at the low flow and 58 percent at the higher flow (TRRP and YT 2013).

Coho Salmon

Under the Proposed Project, no permanent adverse effects to coho salmon spawning habitat would occur within the rehabilitation sites. Instead, the Proposed Project is expected to result in immediate as well as long-term improvements. Figures 8 and 9 illustrate the extent of the grading, excavating, and coarse sediment addition that would occur below the OHWM in riverine habitat at each of the sites. It is anticipated that implementation of the Proposed Project along with the flow management regime implemented by the TRRP would reactivate channel migration across the floodplain within the boundaries of the sites. This dynamic fluvial channel would result in a net increase in point bar surface area through coarse sediment deposition, increasing spawning habitat within the boundaries of the sites. The addition of coarse sediment would immediately provide suitable sized spawning gravels to coho and other salmonids.

Adverse effects on spawning habitat are expected to be limited to short-term, localized sedimentation caused by settling of silt disturbed by bank-side excavation activities; and the addition of coarse sediment material, including contouring and grading in the low-flow channel. Any salmon redds on or near the in-channel work could be destroyed or disturbed by these construction activities. Silt suspended by these activities may be dispersed and re-settle on downstream suitable spawning areas near the construction area. However, all in-channel work would be conducted only during late-summer (July 15-September 15) low-flow conditions, as authorized by NMFS and CDFW, to avoid impacts to spawning anadromous salmonids.

Additionally, installation of temporary crossings (X-1, X-2, and X-3) at Douglas City and a temporary crossing (X-1) at Lorenz Gulch for heavy equipment across the low-flow channel could introduce a small amount of silt and cause stream bed disturbance, resulting in re-suspension of fine substrate materials (i.e., silt) and create short-term, localized increases in turbidity and suspended sediments. Crossing locations were selected based on spawning data provided by members of the TMC. In essence, this information indicated that these locations have not been utilized by spawning salmonids. River crossings would occur only during low flow conditions (Trinity River flows of < 1,500 cfs) which typically take place between July through December but a few equipment crossings at low flow conditions during other months (e.g., late winter/early spring) might also be required. Although the amount of silt mobilized by construction of these crossings is expected to be minimal, this silt could be deposited on either spawning habitat and/or on salmon redds downstream of the activity areas.

Some temporary effects on the quality of habitat for juvenile salmonids would occur through removal of riparian vegetation that contributes to SRA habitat in the Project reaches. The principal effects of in-channel work on fish include displacement of rearing salmonid fishes from their habitat and increased predation risk or reduced feeding efficiency through the loss of the cover function provided by the SRA habitat (Michney and Hampton 1984; Michney and Deibel 1986). However, it is expected that all displaced juvenile fish, including coho salmon, would find suitable habitat within river reaches upstream or downstream of the sites, because juvenile rearing habitat within the mainstem Trinity River is likely under-saturated during summer and fall months (NMFS 2006). The potential direct and indirect effects to fish resulting from increased suspended sediment and turbidity levels are addressed further under Impact 3.6-2.

The adverse impacts on habitat are expected to be offset in the long term by benefits associated with Project implementation at the Proposed Project sites. These benefits would accrue from: 1) the constructed inundation surfaces; 2) overall reconnection of these inundated surfaces to the river at low flows; 3) increased bed mobility and potential channel migration through the alluvial surfaces; and 4) revegetation of these surfaces with native plant species that would contribute shade and large wood to the river channel. Improved connectivity, particularly during high flows is expected to increase areas of slow, shallow-water habitat preferred by salmonid fry. The process of channel migration may also create new point bars, further increasing the availability of this preferred habitat. The constructed side channels and alcove habitats and potential channel migration processes would collectively increase the relative abundance of rearing habitat, compared to the existing condition. Approximately 0.612 acres of low slope (glide) habitat would be impacted by in-channel and riverine work at the Douglas City Rehabilitation Site (Figure 8). In addition, 0.096 acres of moderate slope habitat and 1.709 acres of run habitat would be impacted. There would be impacts to 0.115 acres of estimated spawning use area and 0.518 acres of estimated adult holding habitat. No pool habitat would be affected at this site. At the Lorenz Gulch Rehabilitation Site, approximately 0.386 acres of low slope (glide) habitat would be impacted by in-channel and riverine work (Figure 9). In addition, 0.0396 acres of moderate slope habitat and 0.913 acres of run habitat would be impacted. There would be impacts to 0.0007 acres of estimated spawning use area and 0.097 acres of estimated adult holding habitat. No pool habitat would be affected at this site.

Ultimately, the collective changes in channel morphology as a result of the Proposed Project would improve rearing habitat diversity and abundance, for all anadromous salmonids. LWD would be

strategically placed to provide complex physical habitat for juvenile and adult fish in the Trinity River. Large wood hydraulic and habitat structures would create spawning and rearing habitat, increase nutrient and organic matter retention (which increases food production in the system), and provide refuge from predators and cover during high winter flows (Bustard and Narver 1975; Lestelle 1978; Lestelle and Cederholm 1982; Hicks et al. 1991; Cederholm et al. 1997).

Chinook Salmon

Potential impacts and benefits to Chinook would be generally similar to those previously described for coho salmon. Spring- and fall-run salmon potentially spawn and rear within the sites. Juvenile spring-run Chinook salmon would be expected to rear year-round within the sites and may be displaced by in-river work activities. Additionally, prior to spawning adult spring-run Chinook salmon may utilize holding habitat offered by run, glide, and pool areas within the sites. No permanent adverse impacts to spring-run Chinook salmon holding habitat would occur. The Proposed Project does not include activities that would directly fill, modify, or otherwise affect the quality or quantity of spring-run holding habitat. Temporary effects on spring-run Chinook holding habitat associated with construction of the Proposed Project would be limited to short-term, localized increases in transient turbidity caused by bank-side excavation activities; main channel split flow construction; island construction; and contouring and grading in the low flow channel. The potential effects of increased suspended sediment and turbidity to holding adult spring-run Chinook salmon are addressed under Impact 3.6-2.

Steelhead

Potential impacts and benefits to steelhead resulting from implementation of the Proposed Project would be generally similar to those previously described for coho and Chinook salmon. Summer, fall, and winter runs of steelhead may migrate and stage within or near the sites and may spawn (as adults) and rear (as juveniles).

Pacific Lamprey

Potential impacts and benefits to Pacific lamprey resulting from implementation of the Proposed Project would be similar to those previously described for coho salmon and other anadromous salmonids. The removal of riparian vegetation that contributes to SRA habitat within the sites could have a temporary impact on adult Pacific lamprey by reducing holding and hiding habitat, which is particularly important for upstream migrant adults. However, the implementation of the Riparian Revegetation and Monitoring Plan, described in Appendix A, would lessen this impact over the longer term.

Although the impacts to coho salmon and other anadromous fish under the Proposed Project would be temporary and localized, they would be significant.

MITIGATION MEASURES

Implementation of the Project could result in effects on potential spawning and rearing habitat for anadromous fishes, including the federally and state-listed coho salmon. Therefore, mitigation measures 4.6-1a and 4.6-1b described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of the specified mitigation measures would reduce the impacts to less than significant.

Impact 3.6-2: Implementation of the Proposed Project could result in increased erosion and sedimentation levels that could adversely affect fishes, including the federally and state-listed coho salmon.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, there would be no increase in erosion or sedimentation levels that could adversely affect fish species because the Project would not be constructed. Similar to previous discussions, this alternative acknowledges that a number of restoration activities that are intended to restore the fishery resources and functional values offered by the mainstem Trinity River have been implemented or are ongoing. While some of these activities may result in changes to erosional processes and sedimentation levels, these changes are taken into account in the evaluation of this alternative. The No-Project alternative would not result in an impact with respect to this issue.

PROPOSED PROJECT

Coho Salmon

Activities related to implementation of the Proposed Project would result in the localized loss of vegetation and general disturbance to the bed and banks of the Trinity River. Removal of vegetation and soil could accelerate erosion processes within the boundaries of the rehabilitation sites and increase the potential for sediment delivery to the Trinity River. The turbidity of a water body is related to the concentration of suspended solids. Suspended solids and turbidity generally do not acutely affect aquatic organisms unless they reach extremely high levels (i.e., levels of suspended solids reaching 25 mg/L). At these high levels, suspended solids can adversely affect the physiology and behavior of aquatic organisms and may suppress photosynthetic activity at the base of food webs, affecting aquatic organisms either directly or indirectly (Alabaster and Lloyd 1980).

In-channel and riverine activities including temporary crossings would disturb the alluvial materials that constitute the bed and banks of the Trinity River. Exposed soils on the upland and staging areas are susceptible to mobilization from rainfall during early season runoff events. In-river excavation is planned as part of the Proposed Project; therefore, it is expected that excavation and operation of heavy equipment would resuspend silt and sand, and result in localized and temporary increases of suspended sediment and turbidity.

Operation of heavy equipment in the active channel during these activities would likely resuspend streambed sediments. Any juvenile coho salmon rearing in the area during in-channel construction may be temporarily displaced or their social behavior may be temporarily disrupted by turbidity created during this activity.

At the Lorenz Gulch site approximately, 0.139 acres of mainstem Trinity River main channel habitat would be temporarily impacted during construction by installation of the X-1 low-flow channel crossing for occasional equipment crossings. At the Douglas City site the X-1 crossing covers 0.0106 acres, the X-2 crossing covers 0.0469 acres, and the X-3 crossing covers 0.004 acres. Removal and spreading of gravels composing the temporary low-flow channel crossings after construction would restore stream channels to original contours. These activities would likely resuspend streambed sediments but are not likely to add silt material to the river. Use of washed, spawning-sized gravels and the cleaning of vehicle wheels prior to crossing the channel would minimize the effects of this action on fish habitat. Any juvenile coho salmon rearing in the area during gravel

placement or vehicle crossings may be temporarily displaced or their social behavior may be temporarily disrupted by turbidity created during this activity.

Erosion and deposition of fine sediments associated with implementation of the Proposed Project are expected to be localized and temporary. Some fine-textured materials may settle near or on spawning habitats located downstream of riverine rehabilitation areas, but these materials are not expected to impair redd excavation or spawning. Excavation, grading, and coarse sediment addition within the channel would occur only during low-flow conditions between July 15 and September 15, minimizing the potential for adverse effects on all life stages of coho salmon. Any juvenile coho salmon rearing in the area during this timeframe could be temporarily displaced or their social behavior could be temporarily disrupted by an increase in turbidity. Behavioral disruption, even temporarily, could result in some increased vulnerability to competitive interactions or predation for juvenile coho salmon (Berg and Northcote 1985). These temporary impacts were anticipated and addressed in the 2000 Biological Opinion and associated incidental take statement for the ROD and amended Biological Opinion for in-river work.

Chinook Salmon

Potential impacts to Chinook salmon populations in the Trinity River resulting from Project implementation would be generally similar to those described for coho salmon. Consequently, re-suspension of fine-textured sediment, potential erosion and sediment runoff, and elevated turbidity for short distances downstream could occur during the migration, spawning, and rearing seasons. Spring- and fall-run Chinook salmon are known to spawn in suitable habitats within and adjacent to the sites. Construction activities are proposed during the spawning period, and in-river construction including temporary crossings may temporarily displace holding adult salmonids. Some fine-textured materials may settle near or on known spawning habitats located downstream of riverine rehabilitation areas, but these materials are not expected to impair redd excavation or spawning. Juvenile spring-run Chinook salmon are expected to rear throughout the year within or adjacent to the sites' boundaries, and transient increases in turbidity and re-suspension of sediments would be likely to have similar effects on juvenile Chinook salmon as on coho salmon. Adult spring-run Chinook salmon using holding habitat during the summer months may be displaced to other holding habitats either upstream or downstream by transient turbidity and sediment plumes created by construction activity.

Steelhead

Potential impacts to steelhead populations in the Trinity River resulting from implementation of the Proposed Project would be similar to those previously described for coho and Chinook salmon. Summer and winter runs of KMP ESU steelhead are known to migrate, stage (as adults), and rear (as juveniles) in the Trinity River throughout the proposed construction season. Both runs generally spawn during the winter.

Pacific Lamprey

Potential impacts to Pacific lamprey populations in the Trinity River resulting from implementation of the Proposed Project would be similar to those previously described for coho salmon and other anadromous salmonids. Adult Pacific lamprey migrate upstream from spring through early summer and again in the fall to spawn. Larval lampreys inhabit the river year-round. Siltation of nests that may be built in suitable habitats (i.e., low-slope riffles) could occur. Filter feeding by larval lampreys could be disrupted by an increase in suspended sediments caused by construction-

related erosion, although this impact would be very localized and temporary.

While the Proposed Project would increase aquatic habitat within the boundaries of the sites, the proposed construction activities would result in an increase in erosion and sedimentation in the short-term. While the long-term impact would be beneficial, the short-term impacts on fishes within the Trinity River would be significant.

MITIGATION MEASURES

Implementation of the Project could result in increased erosion and sedimentation levels that could adversely affect fishes, including the federally and state-listed coho salmon. Therefore, mitigation measures 4.6-2a, 4.6-2b, 4.6-2c, 4.6-2d, and 4.6-2e described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of the specified mitigation measures would reduce the impacts to less than significant.

Impact 3.6-3: Construction activities associated with the Proposed Project could result in the accidental spill of hazardous materials that could adversely affect fishes, including the federally and state-listed coho salmon.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, there would be no risk of accidental spills of hazardous material because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

Coho Salmon, Chinook Salmon, Steelhead, and Pacific Lamprey

Construction activities typically include the refueling of construction equipment on location. The Proposed Project also includes activities that would place mechanized equipment (e.g., trucks, excavators) within the active channel for short periods. As a result, minor fuel and oil spills could occur and there would be a risk of larger releases. Without rapid containment and clean up, these materials could be toxic, depending on the location of the spill in proximity to surface water features, including the Trinity River. Oils, fuels, and other contaminants could have deleterious effects on all life stages of salmonids and other anadromous fish within close proximity to construction activities. Although short-term, these impacts are considered significant.

MITIGATION MEASURES

Construction activities associated with the Proposed Project could result in the accidental spill of hazardous materials that could adversely affect fishes, including the federally and state-listed coho salmon. Therefore, mitigation measure 4.6-3a described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of the specified mitigation measure would reduce the impact to less than significant. Section 3.5, Water Quality, and Section 3.13, Hazards and Hazardous Materials, provide additional details on mitigation measures developed for water quality standards, hazards, and hazardous materials.

Impact 3.6-4: Construction activities associated with the Proposed Project could result in the mortality of rearing fishes, including the federally and state-listed coho salmon.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, construction-related mortality to rearing salmonids would not occur because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

Coho Salmon

Coho salmon are known to occur throughout the Trinity River. Suitable coho salmon rearing habitat exists within the boundaries of the rehabilitation sites, and juvenile coho salmon may rear within these boundaries year-round. Adult coho migrate through the sites and use suitable spawning habitat throughout the 40-mile reach of the Trinity River below Lewiston Dam. Direct injury to, or mortality of, coho salmon could occur during in-river construction and construction of the low-flow channel crossings planned under the Proposed Project. These activities would be conducted only during late-summer low-flow conditions (e.g., July 15 – September 15), thus, minimizing the potential for direct mortality to rearing coho, because this period corresponds to a time of the year when the fewest number of juvenile coho salmon are known to occur in Project reaches.

NMFS expects that all displaced juvenile fish, including coho salmon, would find suitable habitat within river reaches upstream or downstream of the sites, because juvenile rearing habitat within the mainstem Trinity River is likely under-saturated during summer and fall months (NMFS 2006). The construction period identified above would completely avoid the spawning period for coho salmon; therefore, direct impacts to adult coho salmon or their eggs/alevins (yolk-sac fry) would not occur.

A small, temporary, but uncertain level of stranding of coho salmon fry could occur on the newly constructed inundation surfaces and side channels during rapidly receding flood-flow periods in the winter and early spring when fry are emerging. Additionally, construction of side channel features could result in stranding conditions as flows recede, particularly if the downstream end fills with fine sediments, potentially stranding coho salmon fry. Although stranding of fry under such receding flood conditions occurs on naturally shallow floodplains (Sommer et al. 2001), the constructed features could increase this process to varying degrees. As fluvial channel migration occurs through these surfaces, the potential for fry stranding is expected to equilibrate to that of a natural stranding risk. While the activities included in the Proposed Project are intended to benefit coho salmon, the short-term construction impacts would be significant.

Chinook Salmon

Potential impacts to Chinook salmon populations in the Trinity River resulting from implementation of the Proposed Project would be similar to those described for coho salmon. Physical construction within and directly adjacent to the river channel could disturb holding spring-run Chinook salmon. The principal effect to spring-run Chinook is that they would be forced to relocate. The Proposed Project would not impair migration, and spring-run Chinook salmon would be able to locate and use suitable holding habitat outside of the disturbed areas. Water temperatures are the coolest in the reach of the Trinity River that encompasses the Proposed Project sites, and physiological effects, or ultimately death, are not expected as temperatures in these reaches of the Trinity River (55-59° F) are below the threshold observed where spring run Chinook can accumulate stresses. Based on studies on temperature tolerance, temperatures in other locations within this section of the Trinity River are sufficiently cool that spring-run Chinook are able to deal with stressors (e.g., relocation) without adverse effect (North State Resources 2005).

Steelhead and Pacific Lamprey

Potential impacts to steelhead and lamprey populations in the Trinity River resulting from implementation of the Proposed Project would be similar to those previously described for coho and other anadromous salmonids.

While the activities included in the Proposed Project are intended to benefit salmonids and other aquatic organisms, the short-term construction impacts would be significant.

MITIGATION MEASURES

Construction activities associated with the Proposed Project could result in the mortality of rearing fishes, including the federally and state-listed coho salmon. Therefore, mitigation measures 4.6-4a, 4.6-4b, 4.6-4c, 4.6-4d, and 4.6-4f described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of the specified mitigation measures would reduce the impacts to less than significant.

Impact 3.6-5: Implementation of the Proposed Project would result in the permanent and temporary loss of SRA for anadromous salmonids.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, loss of SRA habitat would not occur because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

As described in the Trinity River Master EIR Section 4.6, Fishery Resources, the term *riparian habitat* encompasses the range of riparian vegetation conditions along the river corridor including rehabilitation sites. It does not have a specific legal description or definition. For the purposes of this document, the term riparian habitat encompasses the range of riparian vegetation conditions within the boundaries of the sites and is synonymous with SRA habitat.

Coho Salmon, Chinook Salmon, Steelhead, and Lamprey

Removal of montane riparian wetland vegetation along the banks of the Trinity River could adversely affect the quality of SRA habitats used by rearing salmonids. Riparian vegetation is important to the maintenance of healthy fish habitat. Riparian areas provide shade and temperature benefits, sediment, nutrient and chemical regulation, stream bank stability, and inputs of LWD and organic matter to the channel. Riparian vegetation that is adjacent to the river, a component of SRA habitat, is an element of designated critical habitat for coho salmon and a component of EFH for Chinook and coho salmon. Complexity in the riparian environment, an important component of fish habitat, would be increased over the long-term with construction at the Proposed Project sites.

To maintain overall SRA habitat values in the Project reach, the Proposed Project would be designed to minimize losses of riparian vegetation adjacent to the Trinity River channel, except where necessary to re-activate river access to the floodplain. Boundary markers would be installed along all riparian areas outside of delineated rehabilitation activity areas. These markers would prevent construction access to minimize impacts to riparian vegetation. Removal of the riparian berms and re-activation of adjacent floodplains within riverine activity areas would allow for natural revegetation of most of the riparian habitat that would be lost as a result of berm removal and floodplain contouring. Additionally, riparian habitat removed under the Proposed Project would be replaced during the revegetation efforts consistent with the requirements of the Riparian

Revegetation and Monitoring Plan. While no permanent net loss of SRA features would necessarily occur, the short-term impact of removing riparian vegetation (see Figures 10 and 11) is considered a significant impact.

MITIGATION MEASURES

Proposed Project implementation would result in a permanent and temporary loss of SRA for anadromous salmonids. Therefore, mitigation measures 4.6-5a, 4.6-5b, and 4.6-5c described in Appendix A will be implemented to reduce the potential for impacts. Implementation of the specified mitigation measures would reduce the impacts to less than significant.

Impact 3.6-6: Implementation of the Proposed Project would result in fish passage being temporarily impaired during the in-stream construction phase.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, temporary impairment of fish passage would not occur because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

Construction activities at the sites would require temporary channel crossings to move heavy equipment across the low-flow channels. Implementation at the Douglas City site includes three river crossings. These temporary crossings (X-1, X-2 and X-3) would provide access for in-channel work as well as access to river right work areas upstream of the Douglas City Bridge. The low water ford crossing (X-1) at Lorenz Gulch is required to construct the Project and would provide access to river left work areas at that site. The crossings would be constructed to maintain adequate water depths and velocities for fish passage.

Coho Salmon

Construction activities associated with the Proposed Project would require temporary placement of low-flow channel crossings. The crossings would be constructed in a manner that maintains adequate water depths and velocities for fish passage. The temporary crossings at the Douglas City site (X-1, X-2 and X-3) would provide access for in-channel work as well as access to river right work areas upstream of the Douglas City Bridge. The low water ford crossing (X-1) at Lorenz Gulch would provide access to river left work areas. Construction activities may require service vehicles to cross up to several times per week, otherwise vehicle crossing traffic would be kept to a minimum. Equipment operators and inspectors would use a small boat to cross the river on a routine basis at the Lorenz Gulch site. The crossings are expected to be in place long enough to complete work at these activity areas and would be removed once work is completed.

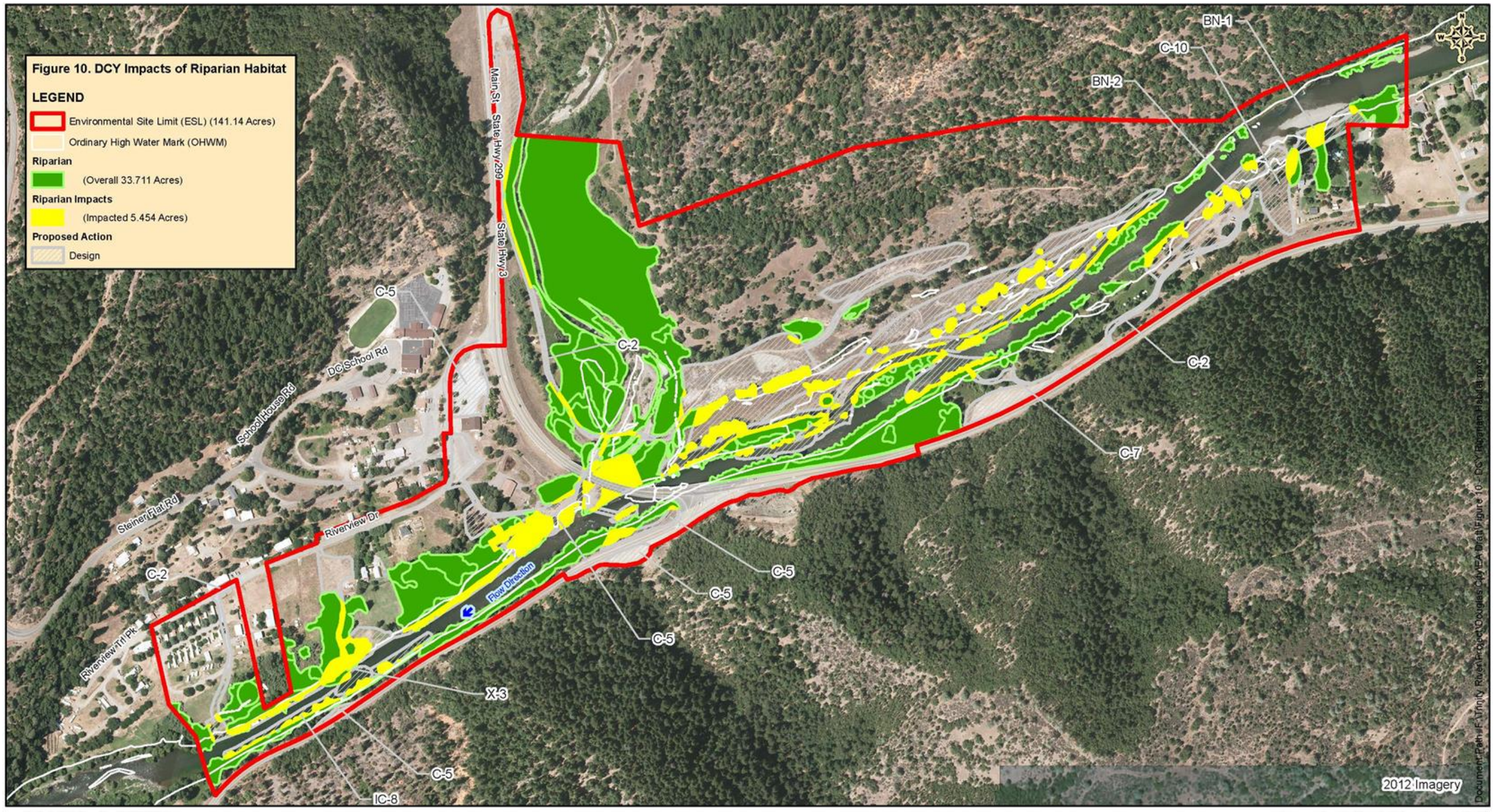

Figure 10. Impacts of the Proposed Project on Riparian Area Habitat at the Douglas City Rehabilitation Site.

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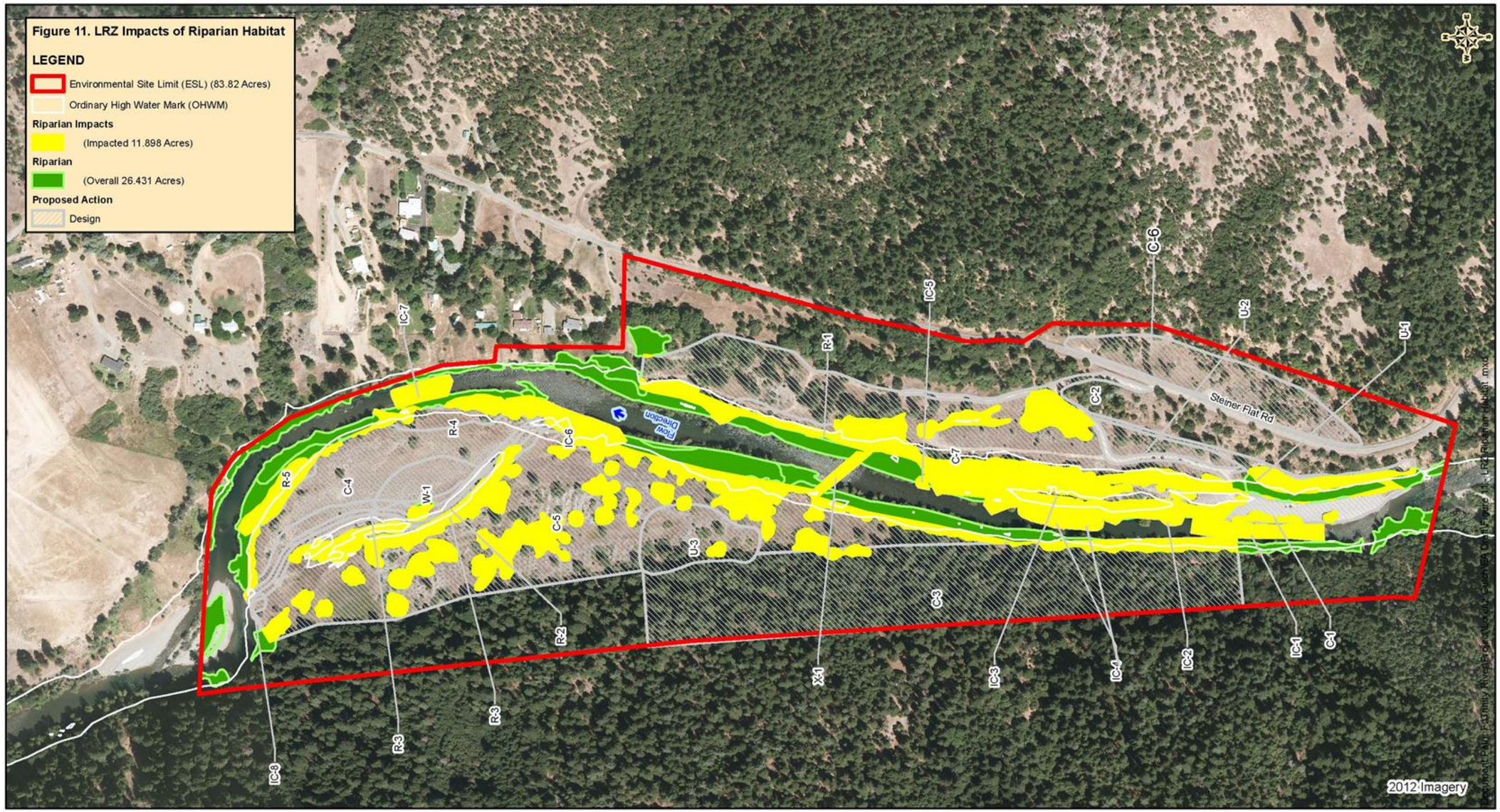

Figure 11. Impacts of the Proposed Project on Riparian Area Habitat at the Lorenz Gulch Rehabilitation Site.

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The (temporary or low-water) crossings would only be constructed during late-summer, low-flow conditions (e.g., July 15–September 15). Use of river crossings could occur during the onset of the fall coho smolt emigration, depending on seasonal conditions (flow, temperatures, etc.) and would occur during the coho adult migration and spawning period. Upon completion of work in riverine areas requiring use of low-flow channel crossings, these crossings would be dismantled and materials would be contoured to the river bottom. Fill materials would consist of appropriately sized spawning gravel as specified by NMFS and CDFW. Use of the temporary crossings would be restricted to the timeframes outlined in the 2000 Biological Opinion (NMFS 2000).

Fish passage design is normally based on the weakest species or life stage present that requires upstream access and should accommodate the weakest individual within that group. For the Proposed Project, low-flow channel crossings would need to meet velocity criteria for upstream migrating juvenile salmonids and depth criteria for migrating adult salmonids, including the federally threatened coho salmon. Maximum velocities and minimum depths are adopted from NMFS Guidelines for Salmonid Passage at Stream Crossings (NMFS 2001) and Part IX Fish Passage Evaluation at Stream Crossings of CDFW's California Salmonid Stream Habitat Restoration Manual (CDFW 2003a). Adult salmonids can negotiate water velocities of up to 8 to 9 feet per second (fps) without difficulty (Bjornn and Reiser 1991). However, juvenile salmonids can only typically negotiate water velocities up to 2 fps over short distances and up to about 1 fps over long distances and sustained periods (NMFS 2001); therefore, crossing designs would include criteria to accommodate these slower velocities for juvenile fish. Minimum water depth over the crossings at low-flow would not be less than 12 inches to provide adequate depth for migrating adult Chinook and coho salmon (NMFS 2001).

Although the construction period could extend into the smolt emigration and coho salmon spawning season, the effect of the low-water crossings on fish passage is expected to be temporary and minimal. Adult anadromous fish generally expend approximately 80 percent of their stored energy reserve during normal upstream migration to suitable spawning areas. Undue exertion or delay at stream crossings due to unsuccessful passage attempts at inadequate (blocking) structures can lead to reduced spawning success and pre-spawning mortality (Robison et al. 1999). Adequate depth and velocities over the crossings would allow for both juvenile and adult passage. While long-term beneficial changes to physical rearing habitat associated with implementing the Proposed Project are anticipated to offset the temporary impacts on fish passage, the temporary impacts on fish passage would be considered significant.

Chinook Salmon

Potential impacts to Upper Klamath-Trinity Rivers ESU Chinook salmon populations in the Trinity River would be similar to those previously described for coho salmon. However, adult migrants from the spring and fall runs of Chinook salmon would be expected to pass through, stage, and/or spawn within the Project boundaries during the construction season. The temporary placement of gravel fill at the crossing would not preclude fish passage since adequate depths and velocities would be maintained.

Steelhead

Potential impacts to the KMP ESU steelhead populations in the Trinity River resulting from implementation of the Proposed Project would be similar to those previously described for coho and Chinook salmon.

Pacific Lamprey

Potential fish passage impacts to Pacific lamprey populations in the Trinity River resulting from implementation of the Proposed Project would be similar to those previously described for coho and Chinook salmon and steelhead.

MITIGATION MEASURES

Implementation of the Proposed Project would result in fish passage being temporarily impaired during the in-stream construction phase. Therefore, mitigation measures 4.6-6a, 4.6-6b, 4.6-6c, and 4.6-6d described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of the specified mitigation measures would reduce the impacts to less than significant.

3.7 Vegetation, Wildlife, and Wetlands

This section describes the vegetation, wildlife, and wetlands that are known to occur at the Proposed Project sites and evaluates the impacts of the Proposed Project on these resources. The discussion of biological resources is based on a focused literature review, informal consultation with resource agencies, and observations made during field visits. Additional information about these resources is contained in Section 4.7 of the Trinity River Master EIR.

3.7.1 Affected Environment/Environmental Setting

3.7.1.1 Plant Communities

There are a variety of plant communities present at the Proposed Project sites. The plant communities known to occur at the sites are shown on Figures 12 and 13 and listed in Table 11. The identification and delineation of these habitat types are based on the draft *Trinity River Riparian Vegetation Map 2008 Update* (TRRP 2009). The main plant communities present are described below. Those plant communities as well as others that may be present at the sites are discussed in more detail in the Trinity River Master EIR (Section 4.7).

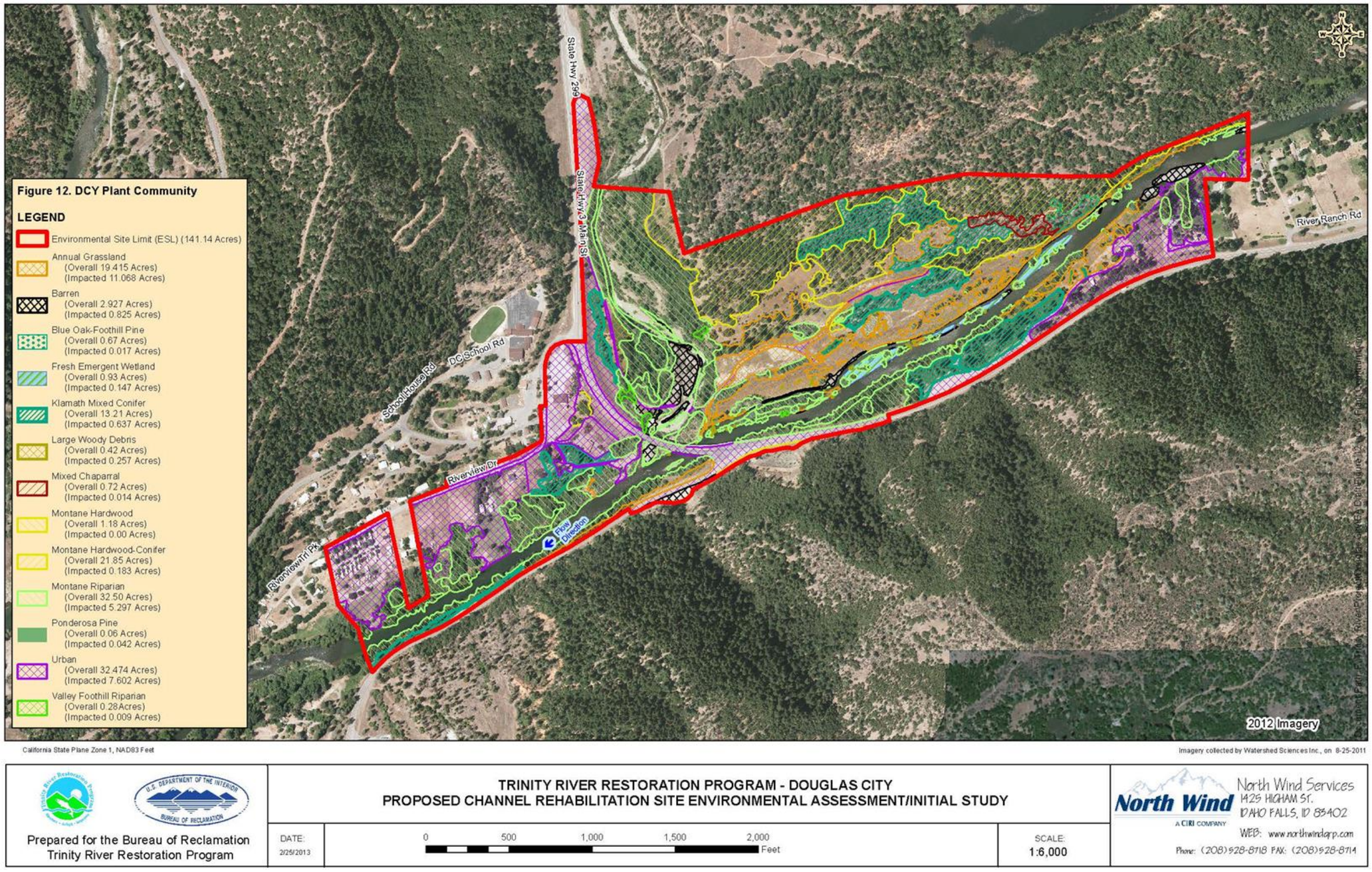

Figure 12. Plant Community Habitats in the Douglas City Rehabilitation Site.
(Habitat classification follows the California Wildlife Habitat Relationships [WHR] model.)

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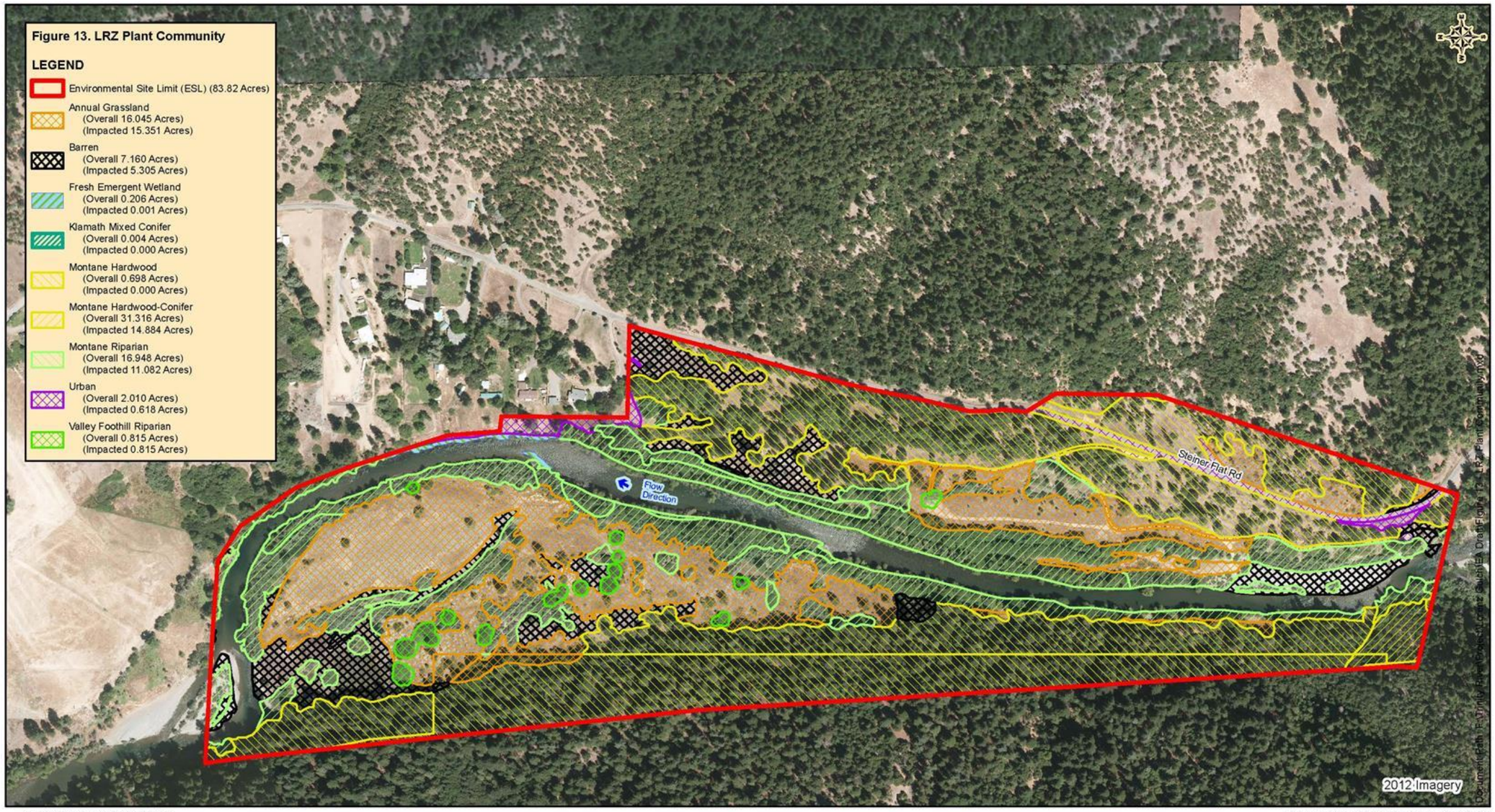

Figure 13. Plant Community Habitats in the Lorenz Gulch Rehabilitation Site.
(Habitat classification follows the California WHR model.)

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Table 11. Plant Community Types Within the Proposed Project Site Boundaries		
PLANT COMMUNITY TYPES	**DCY[1] (ACRES)**	**LRZ[2] (ACRES)**
Fresh Emergent Wetland	0.93	0.206
Grassland	19.415	16.045
Montane Riparian	32.50	16.948
Montane Hardwood-Conifer	21.85	31.316
Riverine	14.49	8.46
Barren	2.927	7.160
Blue Oak-Foothill Pine	0.67	0
Ponderosa Pine	0.06	0
Klamath Mixed Conifer	13.21	0.004
Montane Hardwood	1.18	0.698
Mixed Chaparral	0.72	0
Valley Foothill Riparian	0.28	0.815
Urban	32.474	2.010
Large Woody Debris	0.42	0

[1]DCY = Douglas City

[2]LRZ = Lorenz Gulch

FRESH EMERGENT WETLAND

Fresh emergent wetland habitat occurs in backwaters and depressions along the river and in tailing pits that are saturated for long periods. Species present in this habitat include American tule (*Scirpus americanus*), narrow-leaved cattail (*Typha angustifolia*), dense sedge (*Carex densa*), and common spikerush (*Eleocharis macrostachya*).

GRASSLAND

Grasslands are located on the terraces above montane riparian habitat but below the woodlands. Species present in this habitat include a variety of introduced species, such as Kentucky bluegrass (*Poa pratensis*), wild oats (*Avena fatua*), soft brome (*Bromus hordeaceus*), ripgut brome (*B. diandrus*), cheatgrass (*B. tectorum*), and hare barley (*Hordeum murinum* ssp. *leporinum*); native perennial species, such as creeping wildrye (*Leymus triticoides*); and sedges (*Carex* spp.). Common forbs include broadleaf filaree (*Erodium botrys*), redstem filaree (*E. cicutarium*), California poppy (*Eschscholzia californica*), turkey mullein (*Eremocarpus setigerus*), true clovers (*Trifolium* spp.), burclover (*Medicago polymorpha*), and many others.

MONTANE RIPARIAN

Montane riparian habitat occurs along the riparian berm adjacent to the OHWM of the Trinity River that runs along much of the base of the SR-299 and Steiner Flat Road embankments and is a major component of the habitat types within the sites. The montane riparian community is composed of riparian plant species that are typical for Trinity County. Dominant tree species include bigleaf maple (*Acer macrophyllum*), white alder (*Alnus rhombifolia*), Oregon ash (*Fraxinus latifolia*), black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), and Goodding's black willow (*Salix gooddingii*). Understory species include mugwort (*Artemisia douglasiana*), virgin's bower (*Clematis ligusticifolia*), American dogwood (*Cornus sericea*), Oregon golden-aster (*Heterotheca oregona*), Dalmatian toadflax (*Linaria genistifolia* ssp. *dalmatica*), white sweet clover (*Melilotus alba*), musk monkeyflower (*Mimulus moschatus*), straggly gooseberry (*Ribes divaricatum*), Himalayan blackberry, California blackberry

(*Rubus ursinus*), narrowleaf willow, arroyo willow (*Salix lasiolepis*), shining willow (*S. lucida*), and California wild grape (*Vitis californica*).

MONTANE HARDWOOD-CONIFER

The montane hardwood-conifer habitat type occupies a moderate percentage of the sites. This habitat type generally occurs on coarse well-drained soils on slopes over 50 percent. In the northern interior of California, the montane hardwood-conifer community consists of at least one-third conifer and at least one-third broadleaf trees scattered throughout the landscape in a mosaic-like pattern of small pure stands of conifers interspersed with small stands of broad-leaved trees (Holland 1986; Mayer and Laudenslayer 1988). Geographically and biologically, this plant community often serves as an ecotone between dense coniferous forest and montane hardwood, mixed chaparral, or open woodland vegetation types. Dominant tree species typically observed include Pacific madrone (*Arbutus menziesii*), bigleaf maple, ponderosa pine (*Pinus ponderosa)*, gray pine (*Pinus sabiana*), Douglas-fir (*Pseudotsuga menziesii* var. *menziesii*), canyon live oak (*Quercus chrysolepis*), and black oak (*Q. kelloggii*). Shrub species include greenleaf manzanita (*Arctostaphylos patula*), buckbrush (*Ceanothus cuneatus*), cascara (*Rhamnus purshiana*), skunkbrush (*Rhus trilobata*), snowberry (*Symphoricarpos albus* var. *laevigatus*), and poison-oak (*Toxicodendron diversilobum*). The underlying herbaceous layer includes ripgut brome, cheatgrass, blue wild rye (*Elymus glaucus*), silver bush lupine (*Lupinus albifrons*), purple sanicle (*Sanicula bipinnatifida*), and false hedge-parsley (*Torilis arvensis*).

RIVERINE

Riverine habitat is abundant within the Proposed Project sites and is characterized as the active Trinity River channel within the OHWM as defined by a Hydraulic Engineering Center River Analysis System (HEC-RAS) model developed for Reclamation. Riverine habitat is dominated by run and riffle areas, with boulder, cobble, gravel, and sand substrates. Vegetation within the active river channel is sparse with occasional clumps of torrent sedge (*Carex nudata*).

BARREN

Barren habitat occurs within the Proposed Project sites and consists primarily of dredger tailings, pavement, and sand. Vegetation is usually not present, although sparse opportunistic grasses and forbs or weedy species may occur.

BLUE OAK-FOOTHILL PINE

The blue oak-foothill pine habitat type occurs as a minor component of the habitat types present within the sites. The dominant overstory species present in this habitat is gray pine. Blue oak (*Quercus douglasii*) grows among the gray pines and understory vegetation typically includes greenleaf manzanita, buckbrush, skunkbrush, and poison oak. The herbaceous layer includes ripgut brome, cheatgrass, and false hedge-parsley.

PONDEROSA PINE

Ponderosa pine habitat occurs as a minor component of the habitat types within the sites. The dominant overstory species present in this habitat is ponderosa pine. Understory vegetation includes greenleaf manzanita, buckbrush, and poison-oak. The underlying herbaceous layer includes ripgut brome and cheatgrass.

KLAMATH MIXED CONIFER

The Klamath mixed conifer habitat type is present at the sites. Klamath mixed conifer habitats typically are tall, dense to moderately open, needle-leaved evergreen forests with patches of broad-

leaved evergreen and deciduous low trees and shrubs. This habitat is dominated by tall evergreen conifers up to 200 feet in height with a rich shrub layer and well-developed herbaceous layers. On more xeric sites, the habitat is a generally open but very diverse forestland, having a well-developed shrub layer. The overstory layer is characterized by a mixture of conifers. Typical dominant conifers in the Proposed Project area are Douglas-fir, Ponderosa pine, and incense cedar (*Calocedrus decurrens*). Occasional broadleaf trees include canyon live oak and black oak.

MONTANE HARDWOOD

The montane hardwood habitat type occupies a minor component of the sites. Dominant tree species observed within this plant community include Pacific madrone, bigleaf maple, canyon live oak, and black oak. Associated shrub species observed include greenleaf manzanita, buckbrush, skunkbrush, snowberry, and poison-oak. The underlying herbaceous layer includes ripgut brome, cheatgrass, blue wild rye, silver bush lupine, purple sanicle, and false hedge-parsley.

MIXED CHAPARRAL

Mixed chaparral is a structurally homogeneous brushland type dominated by shrubs with thick, stiff, heavily cutinized evergreen leaves. The dominant species typically include greenleaf manzanita and buckbrush.

VALLEY-FOOTHILL RIPARIAN

Valley-foothill riparian habitats are found in valleys bordered by sloping alluvial fans, slightly dissected terraces, lower foothills, and coastal plains. They are generally associated with low velocity flows, floodplains, and gentle topography. Dominant species in the canopy layer are cottonwood (*Populus* spp.), California sycamore (*Platanus racemosa*), and valley oak (*Quercus lobata*). Subcanopy trees are white alder, boxelder (*Acer negundo*) and Oregon ash. Typical understory shrub layer plants include wild grape, wild rose (*Rosa woodsii*), California blackberry, blue elderberry (*Sambucus cerulean*), poison-oak, buttonbush (*Cephalanthus occidentalis*), and willows (*Salix* spp.). The herbaceous layer consists of sedges, rushes, grasses, miner's lettuce (*Claytonia perfoliata*), Douglas sagewort (*Artemisia douglasiana*), poison-hemlock, and hoary nettle (*Urtica holosericea*).

URBAN

The urban habitat varies by vegetation. Typically this habitat consists mostly of private landscaping and public landscaping including lawns, shrubs, and trees both evergreen and deciduous.

3.7.1.2 Wildlife Resources

The wildlife species typically associated with the primary plant communities present at the Project sites (Table 11) are summarized in the Trinity River Master EIR (Section 4.7). Special status species potentially occurring within, or in close proximity to, the rehabilitation sites are also discussed in the Trinity River Master EIR (Section 4.7 and Table 4.7-1). The Trinity River corridor provides habitat and travel corridors for such species as Pacific fisher (*Martes pennanti pacifica*), American marten (*M. americana*), black-tailed deer (*Odocoileus hemionus columbianus*), river otter (*Lontra canadensis*), beaver (*Castor canadensis*), common merganser (*Mergus merganser*), green heron (*Butorides virescens*), black-crowned night heron (*Nycticorax nycticorax*), wood duck (*Aix sponsa*), belted kingfisher (*Megaceryle alcyon*), cliff swallow (*Hirundo pyrrhonota*), bank swallow (*Riparia riparia*), and raccoon (*Procyon lotor*). The riparian vegetation along the Trinity River, in association with adjacent and/or nearby mixed-conifer and montane hardwood-conifer habitat, provides

connected habitat within an area that has been fragmented by rural residential development and road building.

3.7.1.3 Non-Native and Invasive Plant Species

Non-native and invasive species are present at the Proposed Project sites. Information regarding invasive species is presented in the Trinity River Master EIR (Section 4.7). The approximate location and extent of high priority invasive plants were noted during vegetation surveys conducted for the sites. Invasive species observed at the Douglas City site include poison hemlock (*Conium maculatum*), Himalayan blackberry, tall fescue (*Schedonorus arundinaceus*), perennial pea (*Lathyrus latifolius*), yellow star-thistle (*Centaurea solstitialis*), cheatgrass, and ripgut brome (North Wind 2011). The following invasive species have been observed at the Lorenz Gulch site: yellow star-thistle, Himalayan blackberry, ripgut brome, creeping bentgrass (*Agrostis stolonifera*), common chickweed (*Stellaria media*), and black mustard (*Brassica nigra*) (North Wind 2011).

The high priority noxious weeds that were most prevalent at both sites include Himalayan blackberry and yellow star-thistle. Himalayan blackberry is dominant in the understory of the montane riparian habitat type and yellow star-thistle is typically present in the grassland and barren habitat types. Information about these plant's biology, habitat, and management strategies is presented in Distribution and Applied Management of Invasive Plant Species at Proposed Rehabilitation Sites along the Mainstem of the Trinity River (North State Resources 2007). This report is available for review at: http://odp.trrp.net/FileDatabase/Documents/10042__Trinity_Invasives_Final_Report1.pdf.

3.7.1.4 Jurisdictional Waters (Including Wetlands)

Eight jurisdictional water types, including wetlands and other waters, occur at rehabilitation sites along the Trinity River. Jurisdictional water types present at the Proposed Project sites are shown in Table 12. Each of these is briefly described below. Within the Douglas City Rehabilitation Site boundaries there are a total of 34.307 acres of jurisdictional waters and within the Lorenz Gulch Rehabilitation Site boundaries there are a total of 24.577 acres. There are 19.820 acres of total wetlands at the Douglas City site and 14.487 acres of other waters, comprised primarily of the Trinity River riverine feature. Of the wetlands, there are a total of 15.018 acres of riparian wetlands above OHWM and 4.797 acres of riparian wetlands below OHWM. At the Lorenz Gulch site, there are 13.836 acres of total wetlands and 10.741 acres of other waters including riverine features. Of the wetlands, there are 1.613 acres of riparian wetlands above OHWM and 10.041 acres of riparian wetlands below OHWM. The locations of these features are shown on Figure 14 for Douglas City and Figure 15 for Lorenz Gulch. The USACE and Reclamation performed a site visit on January 29, 2013 for the purpose of verifying the jurisdictional waters identified in the wetland delineation. At this time a letter of jurisdictional determination has not yet been received from the USACE. A post-project delineation would be performed after five years to verify Project impacts to waters of the U.S.

Table 12. Summary acreages of USACE Jurisdictional Waters and Wetlands within the Proposed Project Sites			
Feature Type	**Total acres (Impacted acres)**	**DCY (acres)**	**LRZ (acres)**
Perennial Stream (PS) / Riverine Trinity River	Total acres (Impacted acres)	14.487 (3.385)	10.741 (2.232)
Total Other Waters	**Total acres Impacted acres**	**14.487 (3.385)**	**10.741 (2.232)**
Riparian Wetland (RW) Above OHWM Below OHWM	 Total acres (Impacted acres) Total acres (Impacted acres)	 15.018 (1.315) 4.797 (1.856)	 1.613 (1.559) 10.041 (5.802)
Wetland Swale Above OHWM	 Total acres (Impacted acres)	 0.005 (0.000)	 NP
Depressional Wetland Above OHWM Below OHWM	 Total acres (Impacted acres) Total acres (Impacted acres)	 NP	 1.036 (0.939) 0.003 (0.003)
Seasonal Wetland Above OHWM Below OHWM	 Total acres (Impacted acres) Total acres (Impacted acres)	 NP	 0.624 (0.614) 0.419 (0.418)
Seep/Spring Above OHWM	 Total acres (Impacted acres)	 NP	 0.100 (0.100)
Total Wetlands	**Total acres (Impacted acres)**	**19.820 (3.171)**	**13.836 (11.667)**
Total Jurisdictional Waters	**Total acres (Impacted acres)**	**34.307 (6.556)**	**24.577 (13.899)**

NP – Not Present

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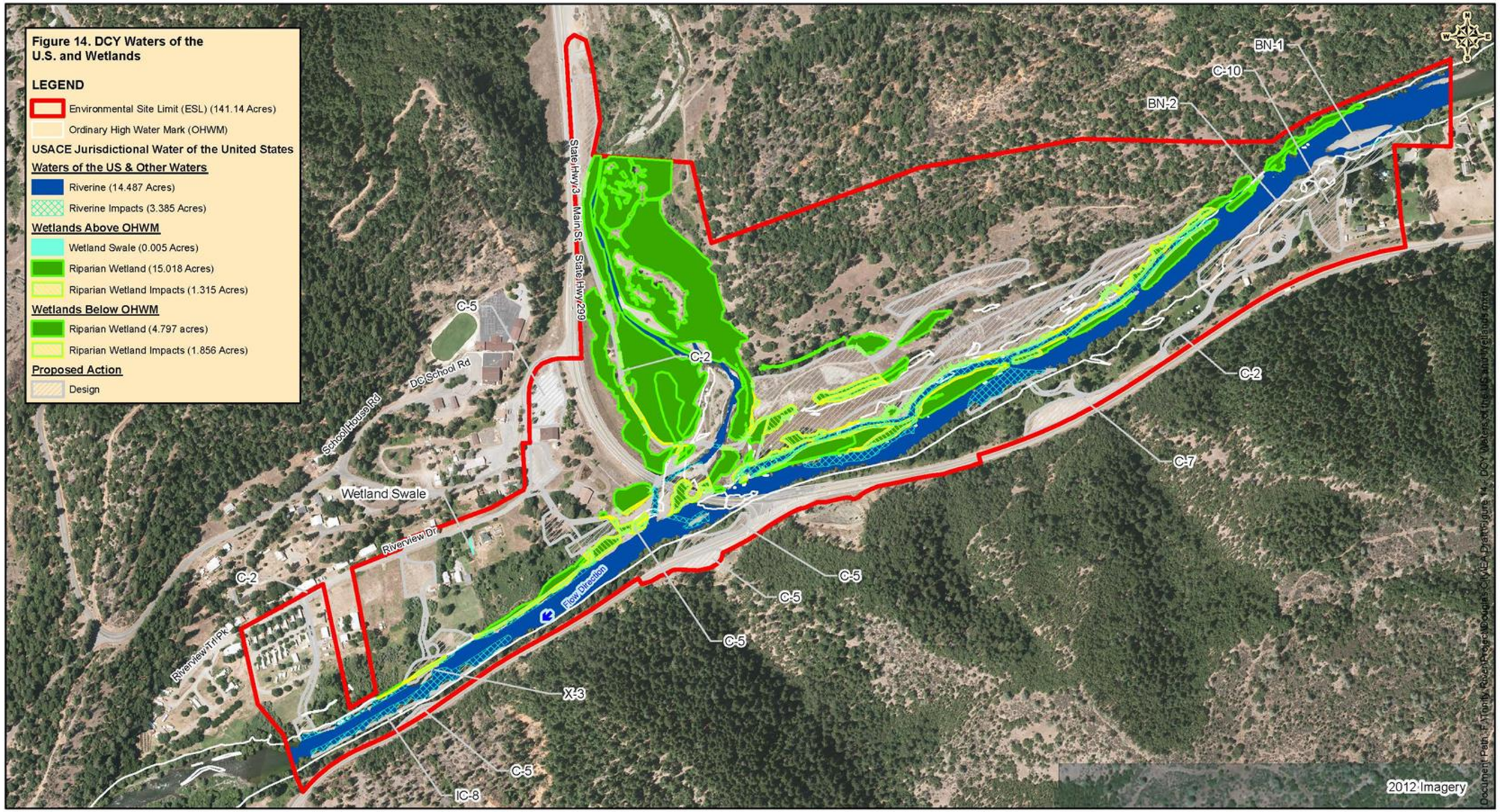

Figure 14. Boundaries of Waters of the United States, Including Wetlands, and Potential Project Impacts, in the Douglas City Rehabilitation Site

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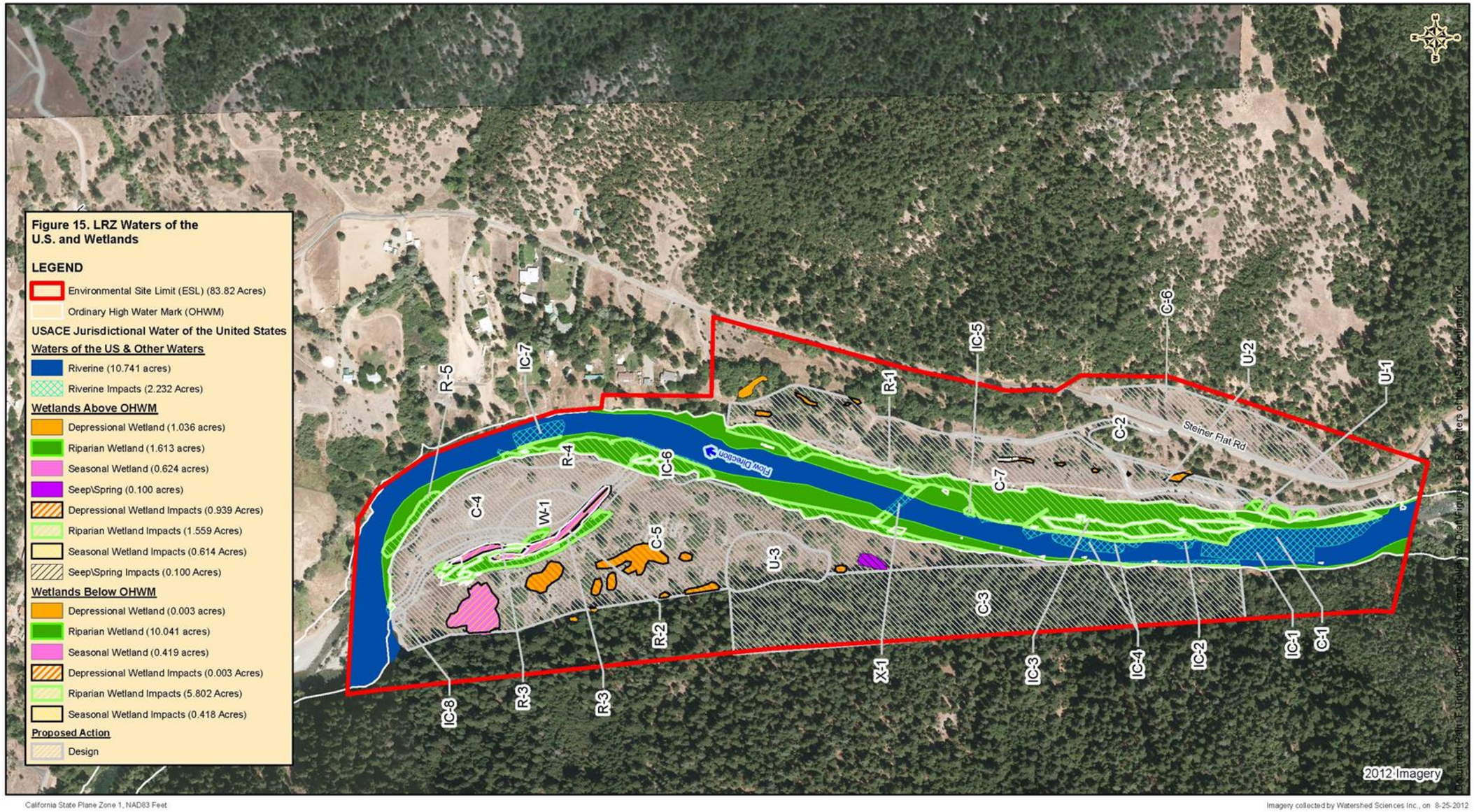

Figure 15. Boundaries of Waters of the United States, Including Wetlands, and Potential Project Impacts, in the Lorenz Gulch Rehabilitation Site.

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RIVERINE (PERENNIAL STREAM)

Riverine habitat occurs at both rehabilitation sites and is characterized as the active Trinity River channel within the OHWM as defined by the HEC-RAS model developed for Reclamation, as well as Weaver Creek at the Douglas City site. Riverine habitat is dominated by run and riffle habitats, with boulder, cobble, gravel, and sand substrates. Vegetation within the active river channel is sparse, with occasional clumps of sedges. Riparian habitat that occurs within the OHWM is characterized as a wetland type; riparian habitat above the OHWM is considered an upland habitat (North Wind 2011). The Trinity River is the primary factor influencing wetland features associated with the sites. Riverine habitat identified as the river itself, exhibits a distinct bed and bank feature (i.e., scouring), as well as continuous inundation, watermarks, drift lines, and sediment deposits.

RIPARIAN WETLANDS

Riparian wetland features line the Trinity River corridor. These wetlands are characterized by a complex of open to dense emergent herbaceous and woody riparian growth. These sites include positive field indicators of wetland hydrology and hydric soils. Herbaceous plant species that almost always occur (> 99 percent probability) are designated as obligates (OBL) and herbaceous plant species that usually occur (> 67 percent probability) are designated as facultative wetland species (FACW). Common vegetation observed in riparian wetland features include: white alder (FACW[7]), Oregon ash (FACW), black cottonwood (FACW), Himalayan blackberry (FACW), California blackberry (FACW), narrowleaf willow (OBL), arroyo willow (FACW), shining willow (NI), American dogwood (UPL), mugwort (FACW), California wild grape (FACW), torrent sedge (FACW+), tall flatsedge (*Cyperus eragrostis* – FACW), least spikerush (*Eleocharis acicularis* – OBL), smooth scouring rush (*Equisetum laevigatum* – FACW), and reed canary grass (*Phalaris arundinacea* – OBL).

WETLAND SWALE

Wetland swale is a wetland type found in low abundance within the Douglas City site. It is primarily a grassland, but differs in that it is long and narrow, and generally conveys water. In this case, it is located below a culvert through which water was flowing. The wet swale feature is the area below the culvert that remained saturated and exhibited all three wetland parameters. The feature was dominated by tall fescue (FAC), soils were saturated providing the hydrology parameter, and hydric soils were determined using best professional judgment based on the long-duration saturation. No physical hydric soil characteristics were observed other than the long-duration saturation. The feature was mapped only to the point where the water subsides to a depth greater than 12 inches into the sandy soil substrate (North Wind 2013).

SPRING/SEEP

The spring/seep feature type is found in low abundance at the Lorenz Gulch Rehabilitation Site. It is a depressional feature that was saturated to the surface and "spongy" with waterlogged moss. It looked similar to some of the depressional wetlands (see below) but for the soft sandy soils and lack of evidence of excavation. The feature was dominated by narrowleaf willow, California rose (*Rosa*

[7] OBL = Obligate Wetland Plants Estimated probability of occurring in wetland >99 percent
FACW = Facultative Wetland Plants Estimated probability of occurring in wetland >67 percent to 99 percent
FAC = Facultative Plants Estimated probability of occurring in wetland 33 percent to 67 percent
FACU = Facultative Upland Plants Estimated probability of occurring in wetland 1 percent to <33 percent
UPL = Obligate Upland Plants Estimated probability of occurring in wetland <1 percent
NI = No Indicator Insufficient information exists to assign a wetland status indicator

californica – FAC), Himalayan blackberry, scouring rush (*Equisetum arvense* – FAC), and spreading bentgrass (FACW) (North Wind 2011).

DEPRESSIONAL WETLAND

Wetland features found within apparent mining-era excavations were labeled as depressional wetlands. These features were present at the Lorenz Gulch Rehabilitation Site and varied in wetness from simply saturated and "squishy" to ponded two feet deep. The vegetation community varied from what is described above for the seasonal wet meadow to emergent wetland types. Plants observed in this wetland type include: tall fescue, curly dock, Baltic rush (*Juncus balticus* – OBL), bog rush, mugwort, reed canary grass, arroyo willow, Himalayan blackberry, and skunkbush (NI). While in some cases, the herbaceous vegetation was difficult to identify or not growing well yet due to the early season field effort, however, the depressional wetlands were easy to identify due to their saturation. In most cases, the features were mapped to the extent of the "squishy" soils or ponding (North Wind 2011).

SEASONAL WETLAND

In general, seasonal wetlands often occur in level or low-lying areas that exhibit positive field indicators of long-duration saturation during the growing season. An area identified as a seasonal wetland was identified within the Lorenz Gulch Rehabilitation Site.

3.7.1.5 Other Biological Resources

Migratory birds and raptors (birds of prey) may nest within, or in close proximity to, the rehabilitation sites. Migratory birds and their nests are protected under the federal Migratory Bird Treaty Act (MBTA; 50 CFR 10 and 21). Most of the birds found in the Project area are protected under the MBTA. Raptors are also protected under the CDFW Code. The plant communities at and near the Project sites provide suitable breeding and foraging habitat for several raptors, such as the red-tailed hawk (*Buteo jamaicensis*) and great horned owl (*Bubo virginianus*). Table 4.7-2 of the Master EIR noted that northern spotted owl (*Strix occidentalis caurina*) habitat does not exist in the Project area. In northern California, this species resides in large stands of old growth, multi-layered, mixed conifer, redwood, and Douglas-fir habitats (NCRWQCB and Reclamation 2009). At these sites, aerial imaging, data interpolation, and pedestrian surveys indicate that habitat within the Project area does not possess features associated with suitable nesting, roosting, or foraging habitat for northern spotted owl. Conditions on site were found to include a high density of small conifers (e.g., < 12 inch dbh), 100 percent canopy closure, and some larger hard woods scattered throughout.

Nesting stands typically include a moderate to high canopy closure (60 to over 80 percent); a multilayered, multispecies canopy with large (greater than 30 inch dbh) overstory trees; a high incidence of large trees with various deformities (e.g., large cavities, broken tops, mistletoe infections, and other evidence of decadence); large snags; large accumulations of fallen trees and other woody debris on the ground; and sufficient open space below the canopy for northern spotted owls to fly (Thomas et al. 1990).

Based on informal consultation with the USFWS during production of the Master EIR, known distribution of spotted owl nests in the area (provided by the USFS), and Trinity River bird distribution data provided by the Redwood Sciences Laboratory, Reclamation and the BLM determined that a biological assessment was not required since the Proposed Project would have no

effect on the northern spotted owl or its critical habitat. Riparian habitat, which is considered a sensitive natural community by the CDFW, is present in the Project areas along the Trinity River. Critical Winter Range for raptors is also present in areas along the Trinity River.

3.7.2 Environmental Consequences/Impacts and Mitigation Measures

3.7.2.1 Methodology

Methods used to assess potential impacts of the Proposed Project on vegetation and wildlife resources included a review of pertinent literature and data and field surveys. Evaluation of the presence of special status species and sensitive habitats within the boundaries of the sites was conducted by performing a database search of the CNDDB and informally consulting with resource agencies (e.g., CDFW, NMFS, and USFWS) regarding biological resource issues associated with the implementation of rehabilitation Projects along the Trinity River. These efforts provided an overview of the quality and character of potential habitat present within the Project reaches.

3.7.2.2 Significance Criteria

Significance criteria used to analyze the potential impacts of the Project on vegetation, wildlife, and wetland resources include factual and scientific information and the regulatory standards of county, state, and federal agencies, including the CEQA guidelines. These criteria have been developed to establish thresholds to determine the significance of impacts pursuant to CEQA (Section 15064.7) and should not be confused with a "take" or adverse effect under the ESA. The Aquatic Conservation Strategy - Consistency Evaluation from Appendix A of the Master EIR is valid for the Proposed Project and included by reference.

Impacts on vegetation would be significant if implementation of the Project would result in any of the following:

- Potential to substantially reduce the number or restrict the range of an endangered or threatened plant species or a plant species that is a candidate for state listing or proposed for federal listing as endangered or threatened;
- Potential for substantial reductions in the habitat of any native plant species including those that are listed as endangered or threatened or are candidates or proposed for endangered or threatened status;
- Potential for causing a native plant population to drop below self-sustaining levels;
- Potential to eliminate a native plant community;
- Substantial adverse effect, either directly or through habitat modifications, on any plant identified as a sensitive or special status species in local or regional plans, policies, or regulations;
- Substantial adverse effect on the quantity or quality of riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations;
- A conflict with any local policies or ordinances regarding protection or control of vegetation resources;
- A conflict with, or violation of, the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, state, or federal habitat conservation plan relating to the protection of plant resources; or
- An increased potential for spread of non-native and invasive plant species.

Impacts on wildlife would be significant if implementation of the Project would result in any of the following:

- Mortality of state or federally listed wildlife species, or species that are candidates for listing or proposed for listing;
- Potential for reductions in the number, or restrictions of the range, of an endangered or threatened wildlife species or a wildlife species that is a candidate for state listing or proposed for federal listing as endangered or threatened;
- Potential for substantial reductions in the habitat of any wildlife species, including those that are listed as endangered or threatened or are candidates or proposed for endangered or threatened status;
- Potential for causing a wildlife population to drop below self-sustaining levels;
- Substantially block or disrupt major terrestrial wildlife migration, or travel corridors;
- Substantial adverse effect, either directly or through habitat modifications, on any wildlife species identified as a sensitive or special status species in local or regional plans, policies, or regulations;
- Substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations;
- A conflict with any state or local policies or ordinances protecting wildlife resources; or
- A conflict with, or violation of, the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, state, or federal habitat conservation plan relating to the protection of wildlife species.

Impacts on wetlands would be significant if they would result in any of the following:

- Substantial adverse effect on any riparian habitat;
- Substantial adverse effect on federally protected wetlands as defined by section 404 of the CWA through direct removal, filling, hydrological interruption, or other means;
- A conflict with any state or local policies or ordinances protecting wetland and/or riparian resources; or
- A conflict with, or violation of, the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, state, or federal habitat conservation plan relating to the protection of wetland resources.

3.7.2.3 Impacts and Mitigation Measures

Table 13 summarizes the potential vegetation, wildlife, and wetlands impacts that would result from the No-Project alternative and the Proposed Project.

Table 13. Summary of Potential Vegetation, Wildlife, and Wetland Impacts for the No-Project and Proposed Project Alternatives

NO-PROJECT ALTERNATIVE	PROPOSED PROJECT	PROPOSED PROJECT WITH MITIGATION
Impact 3.7-1. Construction activities associated with the project could result in the loss of jurisdictional waters including wetlands.		
No impact	Significant	Less than significant
Impact 3.7-2. Implementation of the project would result in the loss of upland plant communities.		
No impact	Less than significant	Not applicable[1]

Table 13. Summary of Potential Vegetation, Wildlife, and Wetland Impacts for the No-Project and Proposed Project Alternatives		
NO-PROJECT ALTERNATIVE	**PROPOSED PROJECT**	**PROPOSED PROJECT WITH MITIGATION**
Impact 3.7-3. Construction of the project could result in the loss of individuals of a special status plant species.		
No impact	Less than significant	Not applicable[1]
Impact 3.7-4. Construction activities associated with the project could result in impacts to the state-listed little willow flycatcher.		
No impact	Significant	Less than significant
Impact 3.7-5. Construction activities associated with the project could result in impacts to foothill yellow-legged frog.		
No impact	Significant	Less than significant
Impact 3.7-6. Construction activities associated with the project could result in impacts to western pond turtle.		
No impact	Significant	Less than significant
Impact 3.7-7. Construction activities associated with the project could result in impacts to nesting Vaux's swift, California yellow warbler, and yellow-breasted chat.		
No impact	Significant	Less than significant
Impact 3.7-8. Construction activities associated with the project could result in impacts to nesting bald eagle and northern goshawk.		
No impact	Significant	Less than significant
Impact 3.7-9. Construction activities associated with the project could result in impacts to special status bats and the ring-tailed cat.		
No impact	Significant	Less than significant
Impact 3.7-10. Construction activities associated with the project could result in the temporary loss of non-breeding habitat for several special status birds.		
No impact	Less than significant	Not applicable[1]
Impact 3.7-11. Construction activities associated with the project could result in impacts to BLM and USFS sensitive species.		
No impact	Less than significant	Not applicable[1]
Impact 3.7-12. Construction activities associated with the project could restrict terrestrial wildlife movement through the project area.		
No impact	Less than significant	Not applicable[1]
Impact 3.7-13. Implementation of the project could result in the spread of non-native and invasive plant species.		
No impact	Significant	Less than significant

[1] Because this potential impact is less than significant, no mitigation is required.

Impact 3.7-1: Construction activities associated with the Proposed Project could result in the loss of jurisdictional waters including wetlands.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, no loss of jurisdictional wetlands would occur because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

Floodplain values and functions would be enhanced by the Proposed Project in conjunction with ROD flows released by the TRD. Consequently, substantial non-riparian areas beyond those identified in pre-project plant community delineations are expected to convert to riparian habitats (in some cases, jurisdictional wetlands), both seasonal and perennial, within a three to five year post-project window. The TRRP would take advantage of opportunities during or after a Project's

construction to enhance wetland functions within a site or to create conditions required for functional jurisdictional wetlands (i.e., hydrology, vegetation, and hydric soils) to persist over time. For example, excavation of areas upslope (above the OHWM) to a depth coincident with medium- or low-flow (2,000–450 cfs) conditions may provide opportunities to establish the hydrologic conditions necessary for establishing functional jurisdictional wetlands.

Construction activities associated with the Proposed Project would result in temporary impacts to jurisdictional waters, including wetland features at the rehabilitation sites. These impacts would be considered significant. Figures 14 and 15 show the acres of jurisdictional waters that would be affected by the Proposed Project. Construction of the Proposed Project at the Douglas City site would result in a direct temporary impact to 3.171 acres of riparian wetlands and 3.385 acres of riverine habitat. Construction of the Proposed Project at the Lorenz Gulch site would result in a direct temporary impact to 7.361 acres of riparian wetland habitat and 2.232 acres of riverine habitat.

MITIGATION MEASURES

Construction activities associated with the Project could result in the loss of jurisdictional waters including wetlands. Therefore, mitigation measures 4.7-1a, 4.7-1b, and 4.7-1c described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of the specified mitigation measures would reduce the impacts to less than significant.

Impact 3.7-2: Implementation of the Proposed Project would result in the loss of upland plant communities.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, no construction-related effects to upland plant communities would occur because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

The Proposed Project would result in the temporary disturbance of upland plant communities (see Figures 12 and 13). While Project activities would modify the contour and slope of upland areas, these areas would be subject to natural recruitment of native plants, supplemented by planting programs consistent with the TRRP vegetation management objectives including minimizing invasive species impacts and the enhancement of wildlife habitat. Over time, these upland areas would be revegetated to the degree that site conditions allow. A combination of replanting and natural revegetation would occur to ensure that upland habitat values on the Trinity River meet wildlife needs. The need for revegetation would be determined via monitoring, coordination with local resource agencies, and adaptively managing to meet changing needs and desired future conditions. Temporary access routes and staging areas would be restored to their original condition upon completion of work. Additionally, any affected upland areas would be revegetated with native plant species.

Impact 3.7-3: Construction of the Proposed Project could result in the loss of individuals of a special status plant species.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, no construction-related impacts to a special status plant species would occur because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

The Proposed Project sites were surveyed for special status plant species in July 2011 following protocols outlined in the Master EIR. No special status plants were detected within the Project boundary during these pre-construction botanical surveys. Therefore, no impacts to special status plant species would occur as a result of the Project.

Impact 3.7-4: Construction activities associated with the Proposed Project could result in impacts to the state-listed little willow flycatcher (*Empidonax traillii*).

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, no construction-related impacts to the little willow flycatcher would occur because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

Suitable montane riparian habitat for the little willow flycatcher may be present at the Proposed Project sites; the species has previously been detected in the region (Wilson 1995; Miller et al. 2003; Herrera 2006). Consequently, little willow flycatchers may nest at the Proposed Project sites. Project activities (e.g., grading, vegetation removal) in montane riparian habitat may result in a temporary reduction of foraging habitat for this species. However, implementation of mitigation measures 4.6-1a, 4.6-1b, and 4.6-1c would ensure that there is no net loss of riparian habitat and a long-term increase in riparian habitat diversity. Due to the temporary nature of the impacts and the regional abundance of similar habitats, the Project is not expected to have a significant impact on habitat for the little willow flycatcher. However, the removal of riparian vegetation and the noise associated with construction activities could disturb individuals nesting on or adjacent to the sites. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Loss of fertile eggs or nesting little willow flycatchers or any activities resulting in nest abandonment would be considered a significant impact.

MITIGATION MEASURES

Construction activities associated with the Proposed Project could result in impacts to the state-listed little willow flycatcher. Therefore, mitigation measures 4.7-4a, 4.7-4b, 4.7-4c, and 4.7-4d described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of the specified mitigation measures would reduce the impacts to less than significant.

Impact 3.7-5: Construction activities associated with the Proposed Project could result in impacts to the foothill yellow-legged frog (*Rana boylii*).

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, no construction-related impacts to the foothill yellow-legged frog would occur. Therefore, there would be no impact.

PROPOSED PROJECT

The foothill yellow-legged frog is known to occur in the Trinity River from the Lewiston Dam to the North Fork Trinity River (CDFW 2003b). Construction activities associated with the Proposed Project may affect foothill yellow-legged frogs directly and indirectly. Potential direct effects include mortality of individuals due to equipment and vehicle traffic, disturbance of boulders or cobbles that support egg masses, and the loss of riparian vegetation cover. The species may also be indirectly affected if construction activities result in degradation of aquatic habitat and water quality due to erosion and sedimentation, accidental fuel leaks, and spills. These impacts would be significant. Over the long term, the Proposed Project would benefit the species through the creation of additional and higher quality habitat, such as feathered edges and backwaters that would provide habitat for early life-stages. At the Douglas City site, habitat for yellow-legged frog would be increased by the IC-7 bank excavation (channel expansion) and IC-2 side channel enhancement: bank lowering and shaping work. At the Lorenz Gulch site, the W-1 pond that would be excavated into the left terrace adjacent to the R-2 side channel would also increase the habitat available to yellow-legged frog.

MITIGATION MEASURES

Construction activities associated with the Proposed Project could result in impacts to the foothill yellow-legged frog. Therefore, mitigation measures 4.7-5a, 4.7-5b, 4.7-5c, and 4.7-5d described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of the specified mitigation measures would reduce the impacts to less than significant.

Impact 3.7-6: Construction activities associated with the Proposed Project could result in impacts to the western pond turtle (*Actinemys marmorata*).

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, no construction-related impacts to the western pond turtle would occur because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

Riverine and riparian habitats along the Trinity River provide suitable habitat for the western pond turtle. Construction activities associated with the Proposed Project could affect pond turtles directly and indirectly. Potential direct effects include mortality of individuals due to equipment and vehicle traffic, disturbance to nests in upland areas, and the loss of riparian cover. The species may also be indirectly affected if construction activities result in degradation of aquatic habitat and water quality due to erosion and sedimentation, accidental fuel leaks, and spills. These impacts would be significant. However, over the long term, the Project would benefit the species through the creation of additional and higher quality habitat. For example, removal of riparian berms would improve access to potential upland nesting and overwintering sites, and the creation of side channels and alcoves with LWD would provide slow-water basking and foraging habitat. At the Douglas City site the IC-4 side channel enhancement with large wood would create off-channel habitat for turtles as would the W-1 pond at the Lorenz Gulch site.

MITIGATION MEASURES

Construction activities associated with the Proposed Project could result in impacts to the western pond turtle. Therefore, mitigation measures 4.7-6a, 4.7-6b, 4.7-6c, 4.7-6d, and 4.7-6e described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed

Project. Implementation of the specified mitigation measures would reduce the impacts to less than significant.

Impact 3.7-7: Construction activities associated with the Proposed Project could result in impacts to nesting Vaux's swift (*Chaetura vauxi*), California yellow warbler (*Dendroica petechia*), and yellow-breasted chat (*Icteria virens*).

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, no construction-related impacts to nesting California yellow warbler, yellow-breasted chat, and Vaux's swift would occur. Therefore, there would be no impact.

PROPOSED PROJECT

The riparian community commonly found along the Trinity River in the vicinity of the Proposed Project sites provides suitable nesting and foraging habitat for the California yellow warbler and yellow-breasted chat. The conifer habitat in the region also provides habitat for the Vaux's swift. Consequently, Project activities may result in impacts to these California Species of Special Concern. The Proposed Project may result in a temporary reduction of foraging and/or roosting habitat for these species. However, implementation of mitigation measures 4.7-1a, 4.7-1b, and 4.7-1c would ensure that there is no net loss of riparian habitat. Furthermore, Project implementation would result in a long-term increase in riparian habitat diversity, increasing the quality of the habitat for the California yellow warbler and yellow-breasted chat. Due to the temporary nature of the impacts and the regional abundance of similar habitats, the Project is not expected to have a significant impact on habitat for the California yellow warbler, yellow-breasted chat, or Vaux's swift. However, the removal of vegetation and the noise associated with construction activities could disturb individuals nesting on or adjacent to the sites. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Loss of fertile eggs or nesting individuals or any activities resulting in nest abandonment would be a significant impact.

MITIGATION MEASURES

Construction activities associated with the Proposed Project could result in impacts to nesting Vaux's swift, California yellow warbler, and yellow-breasted chat. Therefore, mitigation measures 4.7-7a, 4.7-7b, 4.7-7c, and 4.7-7d described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of the specified mitigation measures would reduce the impacts to less than significant.

Impact 3.7-8: Construction activities associated with the Proposed Project could result in impacts to nesting bald eagle (*Haliaeetus leucocephalus*) and northern goshawk (*Accipiter gentilis*).

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, no construction-related impacts to active raptor nests would occur because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

The hardwood and conifer communities commonly found along the Trinity River in the Project region provide suitable nesting and foraging habitat for the bald eagle, designated by the State of California as endangered, and the northern goshawk, designated as a California Species of Special

Concern. The Proposed Project may result in a temporary reduction of foraging and/or roosting habitat for these species. Overall, as a result of the temporary nature of the impacts and the regional abundance of similar habitats, the Project is not expected to have a significant impact on habitat for the bald eagle or northern goshawk. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Loss of fertile eggs or nesting bald eagles or goshawks, or any activities resulting in nest abandonment, would be a significant impact.

MITIGATION MEASURES

Construction activities associated with the Proposed Project could result in impacts to nesting bald eagle and northern goshawk. Therefore, mitigation measures 4.7-8a, 4.7-8b, 4.7-8c, and 4.7-8d described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of the specified mitigation measures would reduce the impacts to less than significant.

Impact 3.7-9: Construction activities associated with the Proposed Project could result in impacts to special status bats and the ring-tailed cat (*Bassariscus astutus*).

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, no construction-related impacts to breeding special status bats or the ring-tailed cat would occur because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

The Trinity River riparian corridor provides suitable roosting and/or foraging habitat for four bat species: the long-eared myotis (*Myotis evotis*), pallid bat (*Antrozous pallidus*), Yuma myotis (*Myotis yumanensis*), and Townsend's western big-eared bat (*Corynorhinus townsendii townsendii*). Two of these bat species (long-eared myotis bat and pallid bat) may roost in trees (e.g., spaces under tree bark or in cavities) as well as caves and buildings, while the other two species (Townsend's western big-eared bat and Yuma myotis) prefer to nest in structures such as buildings, bridges, caves, and mines. For the long-eared myotis and pallid bat (that roost in trees), habitat preference is typically woodland and forest habitat. It is unlikely that these bats would roost in the willows and alders typically found immediately along the Trinity River. However, they may roost in habitats more likely to contain large trees with cavities or loose bark, such as montane hardwood.

Noise and visual disturbances associated with construction activities may disrupt bats roosting within and directly adjacent to the Project areas. Further, removing large trees with cavities could result in the direct loss of colonies, which would be considered a significant impact.

Each of these bat species has the potential to forage in the rehabilitation sites. Foraging habitat typically consists of forested areas in close association with water. Construction activities associated with the Proposed Project could temporarily alter the foraging patterns of these species. However, this would be considered a less than significant impact based on the abundance of suitable foraging habitat in the region. No long-term adverse impacts to foraging habitat associated with Project implementation are anticipated.

The Trinity River riparian corridor also provides habitat for the ring-tailed cat. The willows and alders found immediately along the river are unlikely to provide suitable den habitat for this

species due to the small size of the trees and lack of large cavities or snags. However, other habitats in the Project area, such as montane hardwood and montane hardwood-conifer habitats may provide suitable den sites. Thus, removal of large trees with cavities or snags could result in the loss of ring-tailed cat, which would be considered a significant impact. Construction activities would also result in a short-term reduction in foraging habitat for this species. However, the Project would ultimately result in an increase in habitat and an increase in habitat quality for this species. Due to the abundance of similar habitat in the area, the temporary loss of foraging habitat would be a less than significant impact.

MITIGATION MEASURES

Construction activities associated with the Project could result in impacts to special status bats and the ring-tailed cat. Therefore, mitigation measures 4.7-9a, 4.7-9b, and 4.7-9c described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of these mitigation measures would reduce the impacts to less than significant.

Impact 3.7-10: Construction activities associated with the Proposed Project could result in the temporary loss of non-breeding habitat for special status birds.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, no construction-related impacts to non-breeding habitat for special status bird species would occur because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

The Trinity River riparian corridor provides both foraging and perching habitat for golden eagles, American peregrine falcons, and black swifts, and suitable nesting habitat may be present in some locations. Construction activities associated with the Proposed Project could temporarily alter the foraging patterns of these species. However, this impact would be considered less than significant based on the abundance of suitable foraging habitat in the vicinity of the Proposed Project sites. No long-term adverse impacts to foraging habitat associated with Project implementation are anticipated. The loss of potential perch or nesting trees would not affect the abundance of these species or their use of the Trinity River for foraging.

Impact 3.7-11: Construction activities associated with the Proposed Project could result in impacts to BLM and USFS sensitive species (Pacific fisher).

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, no construction-related impacts to BLM or USFS sensitive species would occur because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

Several of the special status wildlife species with potential to occur at the sites are designated BLM or USFS sensitive species: foothill yellow-legged frog, western pond turtle, northern goshawk, little willow flycatcher, Pacific fisher, long-eared myotis bat, pallid bat, Townsend's western big-eared bat, and Yuma myotis bat. With the exception of the Pacific fisher, potential impacts to these species are discussed as separate impacts above. The Pacific fisher may use the Trinity River as a travel corridor; however, suitable den habitat is not present at the sites. Therefore, the impact would be less than significant.

MITIGATION MEASURES

Construction activities associated with the Project could result in impacts to BLM and USFS sensitive species. Therefore, the following mitigation measures described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Mitigation measures 4.7-4a, 4.7-4b, and 4.7-4c would reduce impacts to the little willow flycatcher to a less than significant level. Mitigation measures 4.7-5a, 4.7-5b, 4.7-5c, and 4.7-5d would reduce the impacts to the foothill yellow-legged frog to a less than significant level. Mitigation measures 4.7-6a, 4.7-6b, 4.7-6c, and 4.7-6d would reduce the impacts to the western pond turtle to a less than significant level. Mitigation measures 4.7-8a, 4.7-8b, and 4.7-8c would reduce the impacts to the northern goshawk to a less than significant level, and mitigation measures 4.7-9a and 4.7-9b would reduce the impacts to special status bat species to a less than significant level. Since no significant impacts for the Pacific fisher were identified, no mitigation is required.

Impact 3.7-12: Construction activities associated with the Proposed Project could restrict terrestrial wildlife movement through the Project area.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, construction-related restriction of terrestrial wildlife movement through the sites would not occur because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

Construction noise and activity would not significantly impede the seasonal migration of the Weaverville deer herd from high-elevation summer habitats to lower elevation critical winter ranges. Construction noise could temporarily alter foraging patterns of resident wildlife species, and vegetation removal along the river could temporarily disrupt wildlife movement through the area. However, no long-term impediments to wildlife movement within the sites are anticipated as a result of implementing the Proposed Project. Therefore, this would be a less than significant impact.

Impact 3.7-13: Implementation of the Proposed Project could result in the spread of non-native and invasive plant species.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, the spread of non-native and invasive plant species would not occur as a result of construction activities because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

Project implementation could result in the spread of non-native and invasive plant species (e.g., Himalayan blackberry, yellow star-thistle, cheatgrass) during ground-disturbing activities. This would be considered a significant impact. Implementation of the mitigation measures described below would address the potential for spread of weeds.

MITIGATION MEASURES

Implementation of the Project could result in the spread of non-native and invasive plant species. Therefore, mitigation measures 4.7-13a, 4.7-13b, 4.7-13c, 4.7-13d, 4.7-13e, 4.7-13f, and 4.7-13g described in Appendix A will be implemented to reduce the potential for impacts associated with

the Proposed Project. Implementation of these mitigation measures would reduce the impacts to less than significant.

3.8 Recreation

This section describes the recreation resources within the boundaries of the Proposed Project sites and evaluates the effects of the Proposed Project on these resources. The Proposed Project's conformance with the federal and state WSRAs is evaluated and the Wild and Scenic River Section 7 Analysis and Determination from Appendix B of the Master EIR is incorporated by reference. Recreation resources are further addressed in the Trinity River Master EIR, Section 4.8.

3.8.1 Affected Environment/Environmental Setting

The federal government manages about 72 percent of the land in Trinity County. BLM is the primary land manager for public lands between Lewiston Dam and the confluence of the North Fork Trinity River, including lands in the corridor of the mainstem Trinity River that comprise portions of the Proposed Project sites. Recreational opportunities are generally available on BLM-managed lands. The Trinity River was designated as a National Wild and Scenic River in 1981. The designated Wild and Scenic reach extends from Lewiston Dam downstream to Weitchpec. Three tributaries to the Trinity River are also designated as Wild and Scenic: the New River, South Fork Trinity River, and North Fork Trinity River. Two scenic byways cross Trinity County: the Trinity Heritage Scenic Byway and the Trinity Scenic Byway. These byways provide scenic travel routes through Trinity County for residents and visitors.

The Trinity River provides year-round recreation opportunities. These opportunities include boating, kayaking, canoeing, rafting, inner tubing, fishing, swimming, wading, camping, gold panning, nature study, picnicking, hiking, and sightseeing. Fishing for Chinook salmon, steelhead, and rainbow and brown trout are major recreational activities on the Trinity River throughout the year. Although instream recreational activities occur throughout the year, they are most prevalent between the months of April and February. Access to the Trinity River is available from both public and private lands, and ranges from undeveloped or primitive use areas to fully developed commercial resorts. Developed recreation areas along the Trinity River consist of private campgrounds, resorts, and lodges; public campgrounds and picnic areas; and fishing access sites. Numerous river access sites occur between Lewiston Dam and Weitchpec. Although public use is restricted at most private river access points, public agencies, including BLM, STNF, CDFW, and California DWR offer a number of public river access points throughout the 40-mile reach. Public river access is not only used for a variety of water-based recreational activities, but for other activities as well, such as wildlife viewing and picnicking. River access and recreational development is concentrated around the communities of Lewiston, Douglas City, and Junction City.

Currently, there are a number of river access points located in the vicinity of the Douglas City site. These recreation areas provide a variety of recreation opportunities such as fishing, whitewater rafting, picnicking, and wildlife viewing. The Douglas City Campground is a BLM-managed campsite that provides overnight and day-use facilities, river access sites and a primitive boat launch site. The campground is located downstream of the Project site near RM 92.6. The Indian Creek Trailer and RV Park, located near RM 95.5, is a privately owned facility that provides

overnight and day-use camp and RV accommodations. The Indian Creek Lodge, located near RM 95.6, is another privately owned facility that provides overnight and day-use lodging accommodations. In addition to these developed areas there are a number of dispersed river access sites located along the Trinity River in this area. River access is available near RM 92.3, RM 95.3, and RM 95.4, as well as farther upstream near RM 97. These sites provide river access for fishing and primitive boat launch sites for rafts, canoes, kayaks and other watercraft.

Because the Lorenz Gulch site is comprised entirely of BLM-managed lands it offers a variety of recreational opportunities, such as fishing, rafting, and swimming. The Hidden Bar area within the Lorenz Gulch site is also popular with recreationists. The BLM's Steiner Flat campground, upstream of the Lorenz Gulch site, attracts recreationists to this reach of the river, and the large boulders and bedrock in this reach create deep holes enjoyed by anglers and swimmers. The campsite at Lower Steiner Flat, located between RM 90.5 and 90.1, is used frequently and the day use area upstream of the campground near RM 90.75 contains a popular swimming hole and raft launch, the "Chop Tree" ramp. There is also a boat ramp upstream at the Steiner Flat Feather Edge area. There is currently access at the Lorenz Gulch site in the Hidden Bar area. However, the Trinity River Recreation Activity Management Plan (1983) indicates no authorized vehicle access for launching boats at Hidden Bar. With construction of this rehabilitation site, motorized travel would be officially authorized to Hidden Bar, and as funding allows, new facilities (parking, boat access, and possibly a toilet) may be developed by the BLM. Implementation of the Proposed Project would expand recreation access by officially opening the route to Hidden Bar to motorized travel, and developing new and better access to the Hidden Bar area.

3.8.2 Environmental Consequences/Impacts and Mitigation Measures

3.8.2.1 Methodology

The analysis of the potential effect on recreation resources as a result of the Proposed Project consists of identifying recreational resources (e.g., recreation facilities) near the boundaries of the sites and determining whether implementation of the action would impact these resources. This analysis is qualitative. In addition to evaluating the impacts on recreational resources, an evaluation was made of the Proposed Project's consistency with Trinity County recreation objectives and state and federal Wild and Scenic River designations. The WSRA Section 7 Determination for the Remaining Phase 1 and Phase 2 sites, which determined that the proposed fishery restoration activities would enhance the river's outstandingly remarkable values (its fishery), is included as Appendix A of the Trinity River Master EIR.

3.8.2.2 Significance Criteria

Impacts associated with recreational uses would be significant if the Project would:

- Conflict with established or planned recreational uses within the sites' boundaries;
- Substantially affect existing recreational opportunities; or
- Result in an increase in the use of the existing neighborhood, regional parks, public lands in general, or other recreational facilities such that substantial deterioration of these facilities would occur or be accelerated.

The following criteria were used to determine if the Proposed Project's impacts to riverine recreation would be significant:

- A substantial increase in turbidity so as to negatively affect recreation aesthetics;
- Incompatibility with the federal or state wild and scenic river designation, which is defined as jeopardizing the river's scenic, recreational, or fish and wildlife resources; or
- Non-compliance with Trinity County recreation resource objectives.

3.8.2.3 Impacts and Mitigation Measures

Table 14 summarizes the potential recreation impacts resulting from the No-Project and Proposed Project alternatives.

Table 14. Summary of Potential Recreation Impacts for the No-Project and Proposed Project Alternatives

NO-PROJECT ALTERNATIVE	PROPOSED PROJECT	PROPOSED PROJECT WITH MITIGATION
Impact 3.8-1. Construction associated with the project could disrupt recreation activities, such as boating, fishing, and swimming, in the Trinity River.		
No impact	Significant	Less than significant
Impact 3.8-2. Construction of the project could result in an increased safety risk to recreational users or resource damage to recreational lands within the project boundaries.		
No impact	Significant	Less than significant
Impact 3.8-3. Construction activities associated with the project could lower the Trinity River's aesthetic value for recreationists by increasing its turbidity.		
No impact	Significant	Less than significant
Impact 3.8-4. Implementation of the project could affect Wild and Scenic River values.		
No impact	Less than significant	Not applicable[1]

[1] Because this potential impact is less than significant, no mitigation is required.

Impact 3.8-1: Construction associated with the Proposed Project could disrupt recreation activities such as boating, fishing, and swimming in the Trinity River.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, there would be no disruption of recreation activities in the Trinity River, such as boating, fishing, and swimming, because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

During Project implementation, there would be construction equipment and activity within the active river channel, the floodplain, and adjacent upland areas in close proximity to the Trinity River. Proposed activities would include vegetation removal and grading. Overall, treatments proposed within the activity areas described in Chapter 2 could result in temporary interruptions of public access and use in the immediate vicinity of the activity areas.

However, river access would remain available to the Douglas City and Lorenz Gulch sites because several public and private access points are present in the vicinity. These alternative access points would ensure uninterrupted public access to the river in the vicinity of the Project boundaries.

In the long term, public access would be improved at the Hidden Bar area in the Lorenz Gulch site. The Trinity River Recreation Activity Management Plan (USDI BLM 1983) currently indicates vehicle access is not authorized for launching boats at Hidden Bar. Upon completion of the activities at this rehabilitation site, motorized travel to Hidden Bar would be officially authorized

by the BLM. Although two existing unauthorized roads would be eliminated, BLM would authorize the existence and use of a 750-foot long road to Hidden Bar, wide enough for vehicle and boat trailer turnaround, additional parking (overnite camping allowed), and the possible placement of a toilet in the future (as funding allows). Although potential disruptions to recreational activities within the sites would be temporary, this impact would be significant.

MITIGATION MEASURES

Construction associated with the Proposed Project could disrupt recreation activities such as boating, fishing, and swimming in the Trinity River, as well as camping along the river. Therefore, mitigation measures 4.8-1a and 4.8-1b will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of these mitigation measures would reduce the impacts to less than significant.

Impact 3.8-2: Construction of the Proposed Project could result in an increased safety risk to recreational users or resource damage to lands within the Project boundaries.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, there would be no safety risks to recreational users or resource damage to lands within the Project boundaries because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

During construction of the Proposed Project, there would be heavy equipment activity and construction vehicle traffic operating within, and immediately adjacent to, the Trinity River.

Activities associated with the Project would require construction work within the river channel for a short period of time. These construction-related activities could distract recreational users (e.g., boaters, anglers) for a short period of time (approximately 3-6 weeks during the low flow period). The in-channel activities would be accomplished in a way that minimizes impacts to navigation (i.e., safety) but this would still be considered a significant impact, albeit temporary.

Activities associated with in-channel treatments would occur between July 15 and September 15. However, work directly adjacent to the river might continue for the duration of the construction period. Vehicular access to activity areas, including both uplands and in-channel areas, would be limited to authorized personnel.

Temporary, construction activities associated with the Proposed Project could pose a significant hazard to recreational users of the river and cause resource damage to recreational lands within the Project boundaries. Potential hazards to recreationists include the operation of construction equipment and vehicles in and around the rehabilitation sites, changes in the river's subsurface movement as a result of the in-channel addition or removal of gravel, the addition of LWD into the channel, and an increased potential for a hazardous materials spill (e.g., diesel and hydraulic fluid) presented by construction equipment and vehicles operating in and adjacent to the river. Potential hazards to resources on recreational lands within Project boundaries include an increased potential for hazardous materials spills and unstable riverbanks and/or uplands resulting from excavation, material addition, road creation, and vegetation removal. These impacts would be temporary, but significant.

Post-construction, activity areas would be evaluated by Reclamation in conjunction with land managers and owners to identify specific prescriptions required to minimize any further potential safety risks to recreational users and to ensure the avoidance of any further Project effects to resources occurring on recreational lands within the Project boundaries.

MITIGATION MEASURES

Construction of the Proposed Project could result in an increased safety risk to recreational users or resource damage to lands within the Project boundaries. Therefore, mitigation measures described above for Impact 3.8.1 will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of the specified mitigation measures would reduce the impacts to less than significant.

Impact 3.8-3: Construction activities associated with the Proposed Project could lower the Trinity River's aesthetic values for recreationists by increasing its turbidity.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, turbidity levels in the Trinity River would not increase because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

Implementation of the Proposed Project could increase turbidity in the Trinity River for some distance downstream. The level of this increase would be largely dependent on the flow regime at the time of the Project. Flows that typically contribute to good fishing tend to be clear thus, nominal increases in turbidity may affect the recreational experience of anglers and the aesthetic values held by other user groups. Water quality objectives for the Trinity River specifically prohibit the discharge of any materials into the river that could cause a nuisance or adversely affect beneficial uses (e.g., recreation).

The Regional Water Board's Basin Plan (NCRWQCB 2011) includes two specific prohibitions directed at construction, logging, and other associated non-point source activities:

- The discharge of soil, silt, bark, sawdust, or other organic and earthen material from any logging, construction, or associated activity of whatever nature into any stream or watercourse in the basin in quantities deleterious to fish, wildlife, or other beneficial uses is prohibited; and
- The placing or disposal of soil, silt, bark, slash, or sawdust or other organic and earthen material from any logging, construction or associated activity of whatever nature at locations where such material could pass into any stream or watercourse in the basin in quantities deleterious to fish, wildlife, or other beneficial uses is prohibited.

Implementation of the Proposed Project would increase the potential for turbidity and total suspended solids during construction activities. Fine sediments could be suspended in the river for several hours following in-channel activities. The extent of downstream sedimentation would be a function of the instream flow velocity and particle size. For example, fine-grained sediments like silts and clays could be carried several thousand feet downstream of the activity area, while larger-sized sediments like sands and gravels would tend to drop out of the water column within several feet of the construction limit. Increased turbidity and suspended solids levels would adversely affect water quality (refer to Section 4.5, Water Quality, of the Trinity River Master EIR) and could adversely affect anadromous fish species that are known to occur in the Trinity River (refer to

Section 4.6, Fisheries Resources, of the Trinity River Master EIR), and could have a noticeable effect on the river's aesthetics. Increases in turbidity would be a significant impact.

MITIGATION MEASURES

Construction activities associated with the Proposed Project could lower the Trinity River's aesthetic values for recreationists by increasing its turbidity. Therefore, mitigation measures 4.5-1a, 4.5-1b, 4.5-1c, 4.5-1d, and 4.5-1e identified to protect water quality and described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of these mitigation measures would reduce the impacts to less than significant.

Impact 3.8-4: Implementation of the Proposed Project could affect Wild and Scenic River values.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, there would be no adverse impacts to Wild and Scenic River values because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

Construction and implementation of the Proposed Project would have a temporary effect on the scenic and recreational components of the Trinity River's Wild and Scenic River values. However, this temporary impact would be less than significant because the rehabilitation activities would ultimately enhance the overall form and function of the Trinity River, thereby enhancing the outstandingly remarkable values for which it was designated a Wild and Scenic River. Temporary impacts on the scenic quality of the river are previously discussed under Impact 3.8-3 and in Section 3.12 (Aesthetics). The impact on Wild and Scenic River values would be less than significant because Project activities would be temporary and would ultimately enhance the "natural" qualities of the river.

3.9 Socioeconomics

This section evaluates potential impacts on socioeconomic conditions, population, and housing from Project implementation at the Proposed Project sites. This section is tiered to the detailed discussion of regional socioeconomic conditions, population, and housing in the Trinity River Master EIR, Section 4.9, as well as additional information for the Phase 1 sites contained in Section 7.9. Information regarding poverty rates and population by race and ethnicity is included in Section 3.18, Environmental Justice, of this EA. Much of the information in this section is derived from Trinity County 2007: Economic and Demographic Profile (Center for Economic Development 2007). Trinity County is a rural region with substantial amounts of public land and a minimal private land base. As a result, the region is largely dependent on natural resources and recreation-based industries for its economic base.

3.9.1 Affected Environment/Environmental Setting

3.9.1.1 Labor Market, Population, and Housing

The labor market, population, and housing discussions in the Trinity River Master EIR (Section 4.9) provide general information that applies to the Proposed Project sites.

LABOR MARKET

The average total labor force in Trinity County between the years of 1991 and 2006 was 5,250 people (California Employment Development Department 2008; Center for Economic Development 2007). Annual variations have ranged from 4,850 people in 1999 to 5,420 people in 2003 (California Employment Development Department 2008; Center for Economic Development 2007). The majority of Trinity County's labor force is concentrated in Weaverville and Hayfork. Trinity County's unemployment rate has been and continues to be consistently higher than the California average. In December 2010, unemployment in Trinity County was 20.5 percent (California Employment Development Department 2011).

POPULATION

Trinity County's population continues to grow at a considerably lower rate than California on average, and was ranked by the U.S. Census Bureau as 54th in total population out of 58 California counties (U.S. Census Bureau 2008). Declines in the timber industry and an attendant loss of jobs have had a significant effect on the county's population.

The population of Trinity County is generally characterized by a higher proportion of white and retirement-age persons and lower proportions of Native American, Hispanic, and young working-age persons (Center for Economic Development 2007). The county's demographics are influenced by the large amount of federally owned land in combination with land used for private industrial timber production (10 percent), much of which is restricted from development due to zoning as a Timber Production Zone (Trinity County 2003). Thus, only about 15 percent of the county is private land that is usable for development purposes. The county's rugged terrain and remote location also influence its demographics by limiting the developable area. Most of the population of Trinity County is concentrated in Weaverville, Hayfork, and Lewiston. Education levels of residents are typical of most rural northern California counties, with a greater proportion of high school graduates and a smaller proportion of college graduates (Center for Economic Development 2007).

HOUSING

The total number of housing units in Trinity County in 2006 was estimated at 8,251 (U.S. Census Bureau 2008). The total number of occupied housing units was estimated at 5,587 (U.S. Census Bureau 2008). During the period of 2000 to 2007, there were 374 single family homes constructed in Trinity County; only two of these were multifamily units (California Employment Development Department 2008). The community of Douglas City offers limited services, including several commercial enterprises, a U.S. Post Office, a water treatment plant, and Douglas City Elementary School. The community has several recreation-based businesses including Douglas City Campground, Trinity Island Resort, Indian Creek Trailer and RV Park, Indian Creek Lodge, and Trinity River Outfitters. These businesses provide economic benefits to local communities and the county; however, the communities are primarily residential.

There is little likelihood that parcels in the vicinity of the Proposed Project sites would be further subdivided because of their location in the floodplain, zoning restrictions, soil conditions, and minimal county services (e.g., community water service). Zoning designations within the community of Douglas City are largely residential, with minimum parcel sizes ranging from 1 to 40 acres (Trinity County 2003). The Rural Residential zoning requires a minimum parcel size of 1 to 5 acres to retain the rural character of the area. In addition, portions of many parcels located directly

adjacent to the river are designated as Flood Hazard and Open Space zones, restricting further development in these areas. Therefore, there is little potential for increased development densities in and around the rehabilitation sites. BLM-managed public lands in and adjacent to the Proposed Project sites are primarily managed for resource and recreation uses, and planned development would need to be consistent with resource and recreation goals and objectives of agency management plans.

3.9.2 Environmental Consequences/Impacts and Mitigation Measures

3.9.2.1 Methodology

The following section provides a brief overview of the methods used to assess the potential socioeconomic impacts of the Proposed Project. These methods included qualitative assessments of potential impacts associated with employment, income, conflicts with county and local plans, population growth, displacement of persons and businesses, and community disruption. For this assessment, Trinity County is considered to be the area of potential socioeconomic impact.

3.9.2.2 Significance Criteria

For purposes of CEQA, under which "economic or social impacts of the Proposed Project shall not be treated as significant impacts on the environment," impacts on population and housing are relevant only if they either (i) directly relate to an impact on the physical environment, in which case a lead agency may, but need not, consider economic or social impacts in determining whether such physical impacts are significant, or (ii) would result in a reasonably foreseeable indirect impact on the physical environment (See CEQA Guidelines, § 15131). Under CEQA, the Proposed Project would have a significant impact on population and housing if it:

- Induces substantial growth in an area, either directly or indirectly;
- Displaces substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; and/or
- Displaces substantial numbers of people, necessitating the construction of replacement housing elsewhere.

3.9.2.3 Impacts and Mitigation Measures

Table 15 summarizes the potential socioeconomic impacts that could result from implementation of the No-Project alternative and the Proposed Project.

Table 15. Summary of Potential Impacts on Socioeconomics for the No-Project and Proposed Project Alternatives

NO-PROJECT ALTERNATIVE	PROPOSED PROJECT	PROPOSED PROJECT WITH MITIGATION
3.9-1. Construction of the project would provide temporary employment opportunities for construction workers in Trinity County.		
No impact	Beneficial	Not applicable[1]
3.9-2. Implementation of the project could result in the disruption or displacement of local businesses.		
No impact	Less than significant	Not applicable[1]
3.9-3. Implementation of the project would result in an increased demand for housing during construction.		
No impact	Less than significant	Not applicable[1]

Table 15. Summary of Potential Impacts on Socioeconomics for the No-Project and Proposed Project Alternatives		
NO-PROJECT ALTERNATIVE	**PROPOSED PROJECT**	**PROPOSED PROJECT WITH MITIGATION**
3.9-4. Implementation of the project would result in concentrated population growth.		
No impact	Less than significant	Not applicable[1]

[1] Because this potential impact is beneficial or less than significant, no mitigation is required.

Impact 3.9-1: Construction of the Proposed Project would provide temporary employment opportunities for construction workers in Trinity County.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, no employment opportunities would be created because the Project would not occur. Therefore, there would be no impact.

PROPOSED PROJECT

Project implementation would generate temporary construction-related employment in Trinity County. The generation of employment would create a beneficial effect on the local economy, even if the employment is short-lived. The exact number of design, construction, and clerical positions required to complete the Proposed Project is undetermined, but implementation of the rehabilitation activities is expected to add a small percentage to existing local jobs during implementation. The duration of employment would be dependent on the length of the contracting and construction period (anticipated to be approximately six months). Because activities at the Douglas City site would not all occur in 2013 there would be two periods of construction-related employment, one in 2013 and one at a later date, most likely 2014. Although the Proposed Project would provide direct local employment opportunities only if workers are hired from the local labor force, this potential impact would be beneficial.

Impact 3.9-2: Implementation of the Proposed Project could result in the disruption or displacement of local businesses.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, there would be no disruption or displacement of local businesses because the Project would not occur. Therefore, there would be no impact.

PROPOSED PROJECT

Local businesses in the vicinity of the sites would not be disrupted or displaced by activities associated with the Proposed Project. Construction equipment and vehicle access would not impair access to local businesses, and business operations would not be impaired. Access to the river and to recreation sites along the river may be temporarily affected because of the presence of equipment. Because activities at the Douglas City site would not be completed in 2013, the potential disturbance could occur in 2013 as well as when the remainder of the Project is implemented. However, because numerous other locations are available in the vicinity of this site, the impact would be less than significant. In addition, access would be improved at Hidden Bar in the long term, which may result in a positive impact to nearby businesses.

Impact 3.9-3: Implementation of the Proposed Project would result in an increased demand for housing during construction.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, there would be no increased demand for housing during construction because the Project would not occur. Therefore, there would be no impact.

PROPOSED PROJECT

The area surrounding the community of Douglas City is primarily rural residential areas, and few rental opportunities are available. What rental property does occur in adjacent rural residential areas is typically seasonal rental property available for recreational users. More readily available short-term apartment and single-family rentals are concentrated in the nearby community of Weaverville and, to a lesser degree, Hayfork.

Implementation of the Proposed Project would not result in the displacement of any individual from his or her home. It is not anticipated that any short-term increase in the demand for housing in Weaverville would occur as a result of construction workers seeking lodging during the Project staging and construction period (primarily July through October) for the Proposed Project. Based on the estimated increase in annual employment generated by the Project (approximately 20 to 30 persons for the whole project as described in the Trinity River Master EIR), this would be a less than significant impact, both regionally and locally. In addition to accommodating the short-term demands for housing during previous TRRP rehabilitation projects, the nearby communities have been capable of meeting short-term increases in housing demands resulting from a large influx of fire suppression personnel on a recurring basis. These Projects would generate a much smaller number of housing needs in comparison to the housing demands generated by wildland fires, and the impact would occur only in the short term. Therefore, the impact would be less than significant.

Impact 3.9-4: Implementation of the Proposed Project would result in concentrated population growth.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, there would not be a population increase because the Project would not occur. Therefore, there would be no impact.

PROPOSED PROJECT

The Proposed Project would require about 20 to 30 individuals during implementation. An increase in population is not anticipated; if any increase were to occur it would likely occur on a temporary basis. Based on current populations in the local communities, the projected number of workers that could move to the greater Weaverville area would result in a localized increase of less than one percent on a temporary basis. This amount would not constitute a significant change in population. Workers would likely be drawn from the local work force, which would further lessen potential population growth associated with the Project implementation. Overall, this impact would be less than significant.

3.10 Cultural Resources

Cultural resources is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. The National Historic Preservation Act (NHPA) of 1966 is the primary Federal

legislation that outlines the federal government's responsibility related to cultural resources. Section 106 of the NHPA requires the federal government to take into consideration the effects of an undertaking on cultural resources listed on or eligible for inclusion in the National Register of Historic Places (NRHP). Those resources that are on or eligible for inclusion in the NRHP are referred to as historic properties.

The Section 106 process is outlined in the federal regulations at 36 CFR 800. These regulations describe the process that the federal agency (Reclamation) takes to identify cultural resources and the level of effect that the proposed undertaking will have on historic properties. In summary, Reclamation must first determine if the action is the type of action that has the potential to affect historic properties. If the action is the type of action to affect historic properties, Reclamation must identify the area of potential effects (APE), determine if historic properties are present within that APE, determine the effect that the undertaking will have on historic properties, and consult with the State Historic Preservation Officer, to seek concurrence on Reclamation's findings. In addition, Reclamation is required through the Section 106 process to consult with Indian Tribes concerning the identification of sites of religious or cultural significance, and consult with individuals or groups who are entitled to be consulting parties or have requested to be consulting parties.

CEQA is the primary state statute that guides cultural resources considerations for actions involving state or local agencies. Similar to the NHPA, the CEQA process seeks to identify cultural resources that are significant and are eligible for inclusion in the California Register of Historical Resources (CRHR) (PRC, Section 21084.1). The guidelines for considering impacts to cultural resources under CEQA are located in the CEQA guidelines, Section 15064.5. If actions result in significant and unavoidable impacts to resources eligible for inclusion in the CRHR, these effects must be mitigated through prescribed procedures. According to CEQA guidelines, if a cultural resource is eligible for inclusion in the NRHP it is eligible for inclusion on the CRHR and a means of mitigating significant and unavoidable impacts under CEQA can be to resolve adverse effects to historic properties using the Section 106 process. General mitigation measures are provided in Appendix A and would be incorporated into a Memorandum of Agreement (MoA) to resolve adverse effects to historic properties assuming such impacts are adverse or significant and unavoidable. By completing the Section 106 process, all the steps and considerations for impacts to cultural resources for CEQA are effectively satisfied.

The TRRP is guided by a Programmatic Agreement (PA) executed between Reclamation and the State Historic Preservation Office (SHPO) in 2000 (USFWS et al. 2000b). The PA outlines an alternative Section106 process as allowed for in the Section 106 regulations at §800.16. The PA outlines a program APE which includes the 100 year floodplain of the Trinity River, access roads, staging, and all TRRP project related activities. Specific actions can result in more refined action specific project areas. Additionally, the PA provides for a streamlined review process on actions that have minimal to no impact on Historic Properties. Reclamation is required to report annually to the SHPO on TRRP actions and undertakings. If an action or undertaking is determined to have an adverse effect to historic properties, Reclamation must seek to resolve that adverse effect through avoidance, project modification, or mitigation through an MoA. By resolving effects to Historic Properties, impacts to cultural resources are effectively mitigated to less than significant under CEQA and no impact under NEPA.

3.10.1 Affected Environment/Environmental Setting

Trinity County was primarily shaped by three economic pursuits: ranching, logging, and mining. Early settlers during the 1840s farmed, logged, and milled lumber (Colby 1982; Cox 1958; Medin and Allen 1998). This lifestyle was disrupted by the discovery of gold in Trinity County at Reading Creek in 1848. Mining on the Trinity River was a significant industrial operation that contributed to the economic development of Trinity County beginning in the 1890s and continuing to the 1960s (Bradley 1941; Jones 1981; Medin and Allen 2007). Boom towns quickly sprang up throughout the basin, with Weaverville and Trinity Center being among the largest, and nearly every flat and bar along the river was subsequently prospected.

Evidence of mining is easily identified by even the casual observer. Large dredge tailings created by multiple gold dredge operations line the banks of the Trinity River depicting various stages of dredge development and implementation. Remnant placer mine operations also mark the hillsides along with their supporting infrastructure such as roads and ditches that brought people, equipment, and water to the gold operations. The largest of the placer mining operations was Union Hill Mine supported by the Union Hill Ditch. Mining activities are dominant through the TRRP APE as well as the Project area at Lorenz Gulch. Although it is known that Native Americans utilized the lands in and immediately adjacent to the Trinity River, evidence of this use is not easily located within the TRRP APE. Archaeological sites containing Native American type artifacts are rare within the TRRP APE and have not been identified during the course of implementing Phase I actions associated with the TRRP.

The Douglas City APE, although mined extensively during the historic period, currently contains no evidence of these mining activities. No cultural resources have been documented within this APE. The majority of the APE is situated within a residential community. Any cultural resources that may have existed have been long since destroyed or removed as part of the development. Further, a review of historic aerial photographs has indicated that, post-1944, the river channel has shifted substantially to the south leaving the reclaimed northern bank (right bank), which is the vast majority of the dry-ground APE, as reclaimed river bottom. This reclaimed area appears to have been substantially altered further by the associated residential development.

Similar to much of the TRRP APE, the Lorenz Gulch Project location has evidence of mining along the Trinity River. As the Project area is located adjacent to the Trinity River, regular flooding appears to have taken its toll on much of the landscape. Within the Lorenz Gulch APE, as part of the documentation effort, four cultural resources have been documented. These four resources are currently being evaluated and the Section 106 process is ongoing.

The left bank (west side of Trinity River) of the Project APE contains two archaeological resources. The first is Hubbard Mine. Hubbard Mine is the incompletely documented remains of an early 20th century hydraulic mining camp. The bulk of the site is situated to the west of the APE, however a portion of the hydraulic-modified landscape encroaches into the western portion of the APE. The other site is an array of dragline dredge tailings. These tailings are the result of limited dragline dredging conducted at this location between 1947 and 1948 by the Placer Exploration Company. They are relatively small in size, likely due to the shallow bedrock, and highly eroded and deflated.

The river right portion contains at least two known cultural resources. These include road-trace remnants of the original Steiner Flat Road towards the extreme east and the remnants of a historic apple orchard on the second terrace.

3.10.2 Environmental Consequences/Impacts and Mitigation Measures

3.10.2.1 Impacts and Mitigation Measures

Table 16 summarizes the potential cultural resource impacts resulting from the No-Project and Proposed Project alternatives.

Table 16. Summary of Potential Cultural Resources Impacts for the No-Project and Proposed Project Alternatives

NO-PROJECT ALTERNATIVE	PROPOSED PROJECT	PROPOSED PROJECT WITH MITIGATION
Impact 3.10-1: Implementation of the project could cause a substantial adverse change in the significance of a known cultural resource.		
No impact	Less than significant	Not applicable[1]
Impact 3.10-2: Implementation of the project could potentially result in disturbance of undiscovered prehistoric or historic resources.		
No impact	Potentially significant	Less than significant

[1] Because this potential impact is less than significant, no mitigation is required.

Impact 3.10-1: Implementation of the Proposed Project could cause a substantial adverse change in the significance of a known cultural resource.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, there would be no effects on cultural resources because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

Implementation of the Proposed Project would effectively avoid, minimize or mitigate impacts to cultural resources as described in the PA. By following the stipulations of the PA, there would be no impacts to cultural resources and all actions under CEQA and NHPA would be fulfilled. Reclamation commits to fulfilling the stipulations of the PA prior to implementation of the Proposed Project.

Impact 3.10-2: Implementation of the Proposed Project could potentially result in disturbance of undiscovered prehistoric or historic resources.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, there would be no effects on cultural resources because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

TRRP rehabilitation activities have the potential to affect unknown cultural resources that may be present at the Proposed Project sites. In the event that any cultural resources or human remains are encountered during Project implementation, all work in the area of the find would halt and Reclamation's Regional Archeologist would be immediately notified. Reclamation would follow the stipulations of the PA and appropriate laws and regulations for compliance with the NHPA and other cultural resources statutes. If the discovery is determined to be a historic property that would

be adversely affected by the rehabilitation activities, Reclamation would resolve the adverse affect by preparing a Historic Property Treatment Plan in accordance with Section III (d) of the PA. If human remains are discovered and identified as Native American, they would be treated according to provisions set forth in Section IV of the PA as well as the Native American Graves Protection and Repatriation Act. Any such impact related to the Proposed Project would be potentially significant.

MITIGATION MEASURES

Implementation of the Proposed Project could potentially result in disturbance of undiscovered prehistoric or historic resources. Therefore, mitigation measures 4.10-2a and 4.10-2b described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of the specified mitigation measures would reduce the impacts to less than significant.

3.11 Air Quality

This section evaluates the air quality impacts associated with implementation of the Proposed Project. Air emissions from Project activities are measured against federal and state standards. Air quality in the vicinity of the Proposed Project sites is discussed in detail in the Trinity River Master EIR (Section 4.11.1). The information below is summarized from that document.

3.11.1 Affected Environment/Environmental Setting

CLIMATE AND TOPOGRAPHY

Trinity County has a climate characterized by hot, dry summers and cold, moderately wet winters (USDA 1998). Most precipitation in the county results from major storms originating in the Pacific Ocean; however, short thunderstorms resulting from localized climate conditions occur in the summer months. The higher mountain ridges receive precipitation as snow and hold most of it until late spring. Precipitation in the lower elevations is predominantly rainfall, with occasional snow in the winter (NCUAQMD 1995). Trinity County has an average summer high temperature of 93.9° F and winter low of 27.3° F.

AIR QUALITY

The Trinity River Master EIR summarizes federal, state and local air quality requirements applicable to the Project area. The 1977 federal Clean Air Act (CAA) requires the EPA to identify National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. Trinity County is part of the North Coast Air Basin (NCAB), and is under the jurisdiction of the North Coast Unified Air Quality Management District (NCUAQMD). Similar to federal requirements, the 1988 California Clean Air Act (CCAA) outlines a program to attain the California Ambient Air Quality Standards (CAAQS). The county is currently in attainment with all federal air quality standards and most state air quality standards; however, the county is in non-attainment for the state particulate matter standard for particulate matter less than 10 microns in diameter (PM_{10}). The California Air Resources Board (CARB), California's state air quality management agency, regulates mobile source emissions and oversees the activities of the NCUAQMD. The NCAB is comprised of five counties in northwest California: Del Norte, Humboldt, Trinity, Mendocino, and a portion of Sonoma County. NCUAQMD is responsible for monitoring and reporting air quality for Trinity County as well as two others.

Trinity County's air quality is generally good. The low population density, limited number of industrial and agricultural operations and minimal traffic congestion problems contribute to the good air quality. Ambient air quality data is available from the Weaverville air monitoring station, which is located approximately 7 miles from the Douglas City Rehabilitation Site and 10 miles from the Lorenz Gulch Rehabilitation Site. Air quality measured at the Weaverville station may not be a precise representation of ambient air quality in the immediate vicinities of the sites but it does provide a good indication of air quality in the general vicinity.

CLIMATE CHANGE AND GREENHOUSE GASES

Climate change refers to a significant change in measures of climate, such as average temperatures, precipitation, and wind patterns, over time. Significant changes in global climate patterns have recently been associated with global warming, an average increase in the temperature of the atmosphere near the Earth's surface, attributed to the accumulation of greenhouse gas (GHG) emissions in the atmosphere.

As of August 2007, CEQA lead agencies are required by law to analyze the potential of a project to produce GHG emissions, which consist primarily of carbon dioxide (CO_2), nitrous oxide (N_2O), and methane (CH_4) (PRC Section 21083.05). The Governor's Office of Planning and Research released a Technical Advisory in June 2008 (California Office of Planning and Research 2008) that provides guidance for addressing CEQA GHG environmental impacts. In particular, "Lead agencies should make a good faith effort, based on available information, to calculate, model, or estimate the amount of CO_2 and other GHG emissions associated with vehicular traffic, energy consumption, water usage and construction activities" (California Office of Planning and Research 2008).

SENSITIVE RECEPTORS

A sensitive receptor is a location where human populations, particularly children, seniors, and sick individuals, are present and where there is a reasonable expectation of continuous human exposure to pollutants. The Projects are not located near a hospital or senior housing. However, they are located near the elementary school in Douglas City. Additionally, both sites have residential areas within and/or adjacent to the site boundaries and both provide recreation opportunities.

3.11.2 Environmental Consequences/Impacts and Mitigation Measures

3.11.2.1 Methodology

Data for the impacts analysis were taken from the following reports on local and regional air quality: Particulate Matter Attainment Plan (NCUAQMD 1995), California Air Quality Data Statistics (California Air Resources Board 2008), North Coast Rules and Regulations (NCUAQMD 2005), and the Trinity County General Plan (Trinity County 2003). The air quality analysis is qualitative, and was conducted by assessing anticipated construction-related impacts of the Project and comparing them to existing and anticipated future air quality conditions.

3.11.2.2 Significance Criteria

According to Appendix G of the CEQA Guidelines, a project would normally have an adverse impact on air quality if it would:

- Violate any ambient air quality standard;
- Contribute substantially to an existing or projected air quality violation;
- Conflict with or obstruct implementation of any applicable air quality plan;

- Result in a cumulatively considerable net increase of any criteria pollutant (e.g., PM_{10}) for which the region is in non-attainment under an applicable state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations;
- Result in substantial air emissions or deterioration of air quality;
- Create objectionable odors;
- Alter air movement, moisture, or temperature, or result in any change in climate, either locally or regionally;
- Produce toxic air contaminant emissions that exceed the air pollution control district's threshold level for health risk; or
- Result in a substantial increase or cumulatively considerable net increase in GHG emissions (e.g., CO_2).

Since the first two criteria include violation of either federal or state air quality standards, these criteria would also be used to determine significance for NEPA compliance. The NCUAQMD has not formally adopted a CEQA threshold of significance for criteria pollutants such as CO, NO_x, PM_{10}, and SO_2, but does use the significant emission rates listed in Table 4.11-3 of the Trinity River Master EIR as a baseline when evaluating a Project's potential impacts to air quality.

3.11.2.3 Impacts and Mitigation Measures

Table 17 summarizes the potential air quality impacts that would result from the No-Project alternative and the Proposed Project.

Table 17. Summary of Potential Air Quality Impacts for the No-Project and Proposed Project Alternatives

NO-PROJECT ALTERNATIVE	PROPOSED PROJECT	PROPOSED PROJECT WITH MITIGATION
3.11-1. Construction activities associated with the project could result in an increase in fugitive dust and associated particulate matter (PM_{10} and $PM_{2.5}$) levels.		
No impact	Significant	Less than significant
3.11-2. Construction activities associated with the project could result in an increase in construction vehicle exhaust emissions.		
No impact	Significant	Less than significant
3.11-3. Construction activities and removal of vegetation associated with the project could result in vegetative materials that managers may decide to burn.		
No impact	Significant	Less than significant
3.11-4. Construction and transportation activities associated with the project could result in an increase of greenhouse gas emissions and effects on climate change.		
No impact	Less than significant	Not applicable[1]
3.11-5. Construction activities would generate short-term and localized fugitive dust, gas, and diesel emissions, and smoke that could affect adjacent residences and schools.		
No impact	Significant	Less than significant

1 Because this potential impact is less than significant, no mitigation is required.

Impact 3.11-1: Construction activities associated with the Proposed Project could result in an increase in fugitive dust and associated particulate matter (PM_{10} and $PM_{2.5}$) levels.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, there would be no construction-related increase in fugitive dust and associated particulate matter levels because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

Rehabilitation activities associated with the Proposed Project would require excavation, grading, disposal of earthen materials, and the use of heavy equipment and travel on unpaved roads, which would temporarily contribute fugitive dust in the Project area. Fugitive dust emissions would also result from activities associated with vegetation removal. As discussed previously, these sources of fugitive dust are associated with PM_{10}, a criteria pollutant, for which the air basin is in non-attainment.

High levels of PM_{10} in Trinity County generally coincide with regional wildland fire events during the dry summer months and with periods of cool, wet weather when localized woodstove use and brush burning activities contribute particulate matter to the air. Fugitive dust resulting from Project activities would occur during the dry summer and early fall months, when PM_{10} levels may be elevated by wood stove use, brush burning, or wildland fires.

As described in Appendix A, the Project includes NCUAQMD-required measures to minimize fugitive dust in and adjacent to the rehabilitation sites. Once rehabilitation activities cease at the sites, the resulting impact on air quality would also cease. While the Project design minimizes fugitive dust, Project generated fugitive dust would be considered a significant impact because the air basin is in non-attainment status for particulate matter. The impact would be temporary (during implementation).

MITIGATION MEASURES

Construction activities associated with the Project could result in an increase in fugitive dust and associated particulate matter (PM_{10} and $PM_{2.5}$) levels. Therefore, mitigation measure 4.11-1a described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of the specified mitigation measure would reduce the impacts to less than significant.

Impact 3.11-2: Construction activities associated with the Proposed Project could result in an increase in construction vehicle exhaust emissions.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, no increase in construction vehicle exhaust emissions would occur because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

Construction associated with the Proposed Project would require the use of equipment that would temporarily contribute to air pollution in the Trinity River Basin. Exhaust emissions from heavy equipment during construction could contribute to air pollution. Project construction activities would generate emissions from diesel- and gasoline-powered equipment and vehicles. Diesel

particulate is an identified Hazardous Air Pollutant (HAP) and Toxic Air Contaminant (TAC), emissions of which should be minimized. In this regard, construction activities would require the contractor to comply with NCUAQMD Rule 104 (3.0), Particulate Matter, or use portable internal combustion engines registered and certified under the state portable equipment regulation. Because diesel particulate matter is both a HAP and a TAC, and because these pollutants would be emitted as a result of Project implementation, the Proposed Project would have a significant impact on air quality.

MITIGATION MEASURES

Construction activities associated with the Proposed Project could result in an increase in construction vehicle exhaust emissions. Therefore, mitigation measure 4.11-2a described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of the specified mitigation measure would reduce the impacts to less than significant.

Impact 3.11-3: Construction activities and removal of vegetation associated with the Proposed Project could result in vegetative waste materials that managers may decide to burn.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, there would be no vegetative waste materials that would need to be burned because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

Implementation of the Proposed Project would include vegetation removal resulting in vegetative material that would be buried, piled to create wildlife habitat, chipped, or burned. Though vegetative materials are most frequently chipped and added back to the floodplain or upland area to enhance growing conditions, occasionally burning of vegetation (e.g., weedy materials) is completed. Piling and burning is a quick and economical way to eliminate flammable biomass and reduce concentrations of wildland fuels. Brush piles set aside for burning would be left intact until site construction is finished, and subsequently burned under the direction of Reclamation, consistent with BLM and Cal Fire requirements. Burning vegetation in the fall/winter period (November-April) would eliminate effects to nesting birds. In the event that piles are burned, smoke would temporarily contribute to air pollution in the Trinity River Basin. Burning vegetation would contribute particulate matter to the air, a criteria pollutant for which the basin in is non-attainment. Therefore, the impact would be significant.

MITIGATION MEASURES

Construction activities and removal of vegetation associated with the Proposed Project could result in vegetative waste materials that managers may decide to burn. Therefore, mitigation measures 4.11-3a, 4.11-3b, and 4.11-3c described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of the specified mitigation measures would reduce the impacts to less than significant.

Impact 3.11-4: Construction and transportation activities associated with the Proposed Project could result in an increase of greenhouse gas emissions and effects on climate change.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

Transportation and construction activity associated with Project implementation would generate GHG emissions from diesel- and gasoline-powered vehicles and equipment. Burning vegetation would also emit CO_2, which is a GHG. Several measures are identified in Appendix A that are intended to reduce the impacts relative to climate and GHGs. These measures are incorporated into the Proposed Project. Additionally, the following measures would be used to enhance the awareness of global warming in conjunction with the Proposed Project:

- Provide Project contractors with educational material about fuel efficiency and incentives;
- Promote incentives for contractors to initiate ride-sharing programs;
- Promote the use of energy efficient and alternative fuel construction equipment and transportation fleets through contract incentives;
- Require contractors to provide recycling bins for on-site waste materials;
- Provide incentives for contractors to use re-usable water containers rather than plastic bottled water;
- Provide incentives for contractors to hire locally; and
- Require re-useable batteries for equipment that can use them.

In order to determine the significance of the impact of a rehabilitation project, a "carbon foot-print" was estimated in the Trinity River Master EIR based on a project's potential generation of GHGs (primarily CO_2) from project activities at the remaining Phase 1 sites. Project activities that would offset potential impacts were weighed in the equation. The analysis in the Trinity River Master EIR determined that rehabilitation at all of the remaining Phase 1 sites would produce approximately 3 metric tons of CO_2 per day over the life of the project. Total GHG emissions resulting from the proposed activities would be approximately 2,050 metric tons of CO_2.[8] Vegetation replanting and natural re-seeding within the existing riparian area would offset the total project GHG emissions by approximately 20 metric tons of CO_2 over a five-year period. Additionally, project activities may result in opportunities to increase the amount of riparian and upland vegetation.

Based on those calculations, the Trinity River Master EIR determined that rehabilitation at the remaining Phase 1 sites would not generate significant increases in GHGs or an ongoing increase in the demand for off-site energy production because there would be no new facilities constructed. While a project's GHG emissions associated with the use of heavy equipment would be measurable over the course of the project, GHG emissions and any effects on global climate change would not be cumulatively significant considering the amount of GHG emissions generated by the rehabilitation and the current local air quality conditions. Overall, the impacts of rehabilitation

[8] The mobile combustion CO_2 Emissions Calculation Tool was used to calculate GHG emissions for combustible fuel (Greenhouse Gas Protocol Initiative 2005), and the Construction Carbon Calculator was used to calculate GHG emissions for vegetation loss (BuildCarbonNeutral 2007). The calculation is based on 23 days of construction per site as estimated for the Remaining Phase 1 sites and includes diesel fuel combustion and loss of vegetation.

activities would be less than significant with respect to GHG. As a result, the Proposed Project would result in impacts that would be less than significant because it represents a much smaller action than that analyzed in the Trinity River Master EIR.

Impact 3.11-5: Construction activities would generate short-term and localized fugitive dust, gas, and diesel emissions, and smoke that could affect adjacent residences and schools.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, no construction or transportation activities would occur because the Project would not be implemented. Therefore, there would be no impact.

PROPOSED PROJECT

Construction activity associated with the Proposed Project would generate fugitive dust, gas, and diesel emissions and the Project could generate smoke from vegetation burn piles, all of which could expose a number of adjacent residents and the nearby elementary school to air pollutants. Schools and residences are considered sensitive receptors. Therefore, this would be a significant impact.

MITIGATION MEASURES

Construction activities would generate short-term and localized fugitive dust, gas, and diesel emissions, and smoke that could affect adjacent residences and schools. Therefore, mitigation measures 4.11-5a, 4.11-5b, 4.11-5c, and 4.11-5d described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of the specified mitigation measures would reduce the impacts to less than significant.

3.12 Aesthetics

This section describes the aesthetic values and visual resources that are known to occur within the Proposed Project site boundaries and evaluates the effect that the Proposed Project could have on these values and resources. Public lands in the Trinity River corridor are managed to meet the following BLM's Visual Resource Management Class II objective: "to retain the existing character of the landscape. The level of change to the characteristic landscape should be low." Therefore, management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape. More details about this resource are described in the Trinity River Master EIR (Section 4.12).

3.12.1 Affected Environment/Environmental Setting

3.12.1.1 Visual Environment

The visual environment, or character, is a function of both the natural and artificial landscape features that make up a view. Geologic, hydrologic, botanical, wildlife, recreational, and urban features such as roads, homes, and earthworks directly influence the visual character of an area. The perception of the visual character of an area can vary significantly by season and even by hour as light, shadow, weather, and the elements that compose the view change. Form, line, color, and texture are the basic components used to describe visual character and quality for most visual assessments (Federal Highway Administration 1983). The dominance of each of these components

on the landscape serves to form the viewer's impression of the area. A viewer's impression directly corresponds to the aesthetic value of the landscape. The aesthetic value of an area is a measure of its visual character and scenic quality combined with the viewer response.

The visual character of the Trinity River as a whole is typified by the river channel, bordered by bands of riparian vegetation interspersed between homes, businesses, and, occasionally, deposits of dredge tailings. The riparian vegetation transitions to upland vegetation as the viewer moves away from the river. The location and boundaries of the Proposed Project sites are illustrated in Figures 2 and 3. Adjacent roads offer varying degrees of views of the river and rehabilitation sites. The Douglas City Rehabilitation Site is visible from SR-3, SR-299, Steiner Flat Road, and Riverview Drive. The Lorenz Gulch Rehabilitation Site is partially visible from Steiner Flat Road.

VIEWER GROUPS

The Proposed Project sites are subject to the perceptions of the following three distinct viewer groups: motorists, residents, and recreationists. Motorists are those persons who would view the sites from a moving vehicle and may be drivers or passengers. Views of the river corridor from the roadway at the Proposed Project sites are somewhat limited and of short-duration for motorists. Residents are people whose homes and/or property are in close proximity to, and have a view of, one of the Proposed Project sites or a portion of a site. The individual sensitivity of residents to aesthetics and changes within a viewshed is highly variable. Recreationists are members of the community or the general public who use the recreational resources available within or adjacent to a site. The Trinity River provides a myriad of recreational opportunities that are discussed in Section 3.8 (Recreation). Typically, recreational users are highly sensitive to the visual character of the river corridor since most are drawn to the area by an appreciation of its scenic nature.

LIGHT AND GLARE

Because of the rural nature of the Trinity River corridor, the primary sources of artificial light are limited to vehicles passing through the area on state, local, and private roads; concentrations of commercial/residential buildings; and, to a lesser degree, recreational features and facilities. Glare may occur during the daylight hours as the sun is reflected off the river or light-colored alluvium associated with the Trinity River floodplain.

VISUAL ASSESSMENT UNITS AND KEY OBSERVATION POINTS

The Federal Highway Administration (1983) defines a viewshed as all of the surface area visible from a particular location (e.g., a highway pull-out) or sequence of locations (e.g., a highway or trail). Viewsheds are referred to as Visual Assessment Units (VAUs) throughout this section of the document. VAUs are established to represent views of visually sensitive resources observed from various locations surrounding homes, public access areas, or roads in the Project vicinity. VAUs provide a framework for comparing the visual effects of the Proposed Project.

VAUs for the Proposed Project sites were based on visibility from surrounding homes or public access areas along SR-299, SR-3, Riverview Drive, and Steiner Flat Road, with one VAU corresponding to the site boundary being identified for each site. Although the river channel is somewhat obscured from the view of motorists by vegetation and topography, some portions of the construction areas are visible from SR-3, SR-299, Riverview Drive, and Steiner Flat Road. Key observation points[9] (KOPs) are identified for the VAUs, along commonly traveled routes or other

9 Points from which the project boundary or portions thereof are visible from sensitive receptor areas, such as major travel routes and/or surrounding homes.

likely observation points from which a representative group (i.e., residents, recreationists, or motorists) could view one of the rehabilitation sites (Figures 16 and 17). Table 18 provides a brief description of the KOPs and representative photographs of the sites are included as Tables 19 and 20.

Table 18. Key Observation Points for the Proposed Project	
KOP	**Description of Key Observation Points**
DCY1-1	View from river left from SR-3, looking northwest at the river and project area.
DCY1-2	View from river left from SR-3, looking north at the river and project area.
DCY2-1	View from river left from SR-299, looking north at the river and project area.
DCY2-2	View from river left from SR-299, looking northeast at the river and project area.
DCY3-1	View from river left from SR-299, looking north at the river and project area, near private land.
DCY3-2	View from river left from SR-299, looking northeast at the river and project area, near private land.
DCY4-1	View from Douglas City Bridge, looking downstream into the project area.
DCY4-2	View from Douglas City Bridge, looking upstream into the project area.
DCY5-1	View from river right from SR-299, looking northeast at the river and project area.
LRZ1-1	View from river right from Steiner Flat Road, looking west into the project area.
LRZ2-1	View from river right from Steiner Flat Road, looking southwest into the project area.
LRZ2-2	View from river right from Steiner Flat Road, looking northwest into the project area.
LRZ3-1	View from river right from Steiner Flat Road, looking northwest into the project area, near the private parcels.

WILD AND SCENIC RIVERS

The sites are located within the corridor of the Trinity River designated under the federal and state WSRA. A review of the consistency of the Proposed Project with federal and state Wild and Scenic River designations is presented in Appendix A of the Trinity River Master EIR.

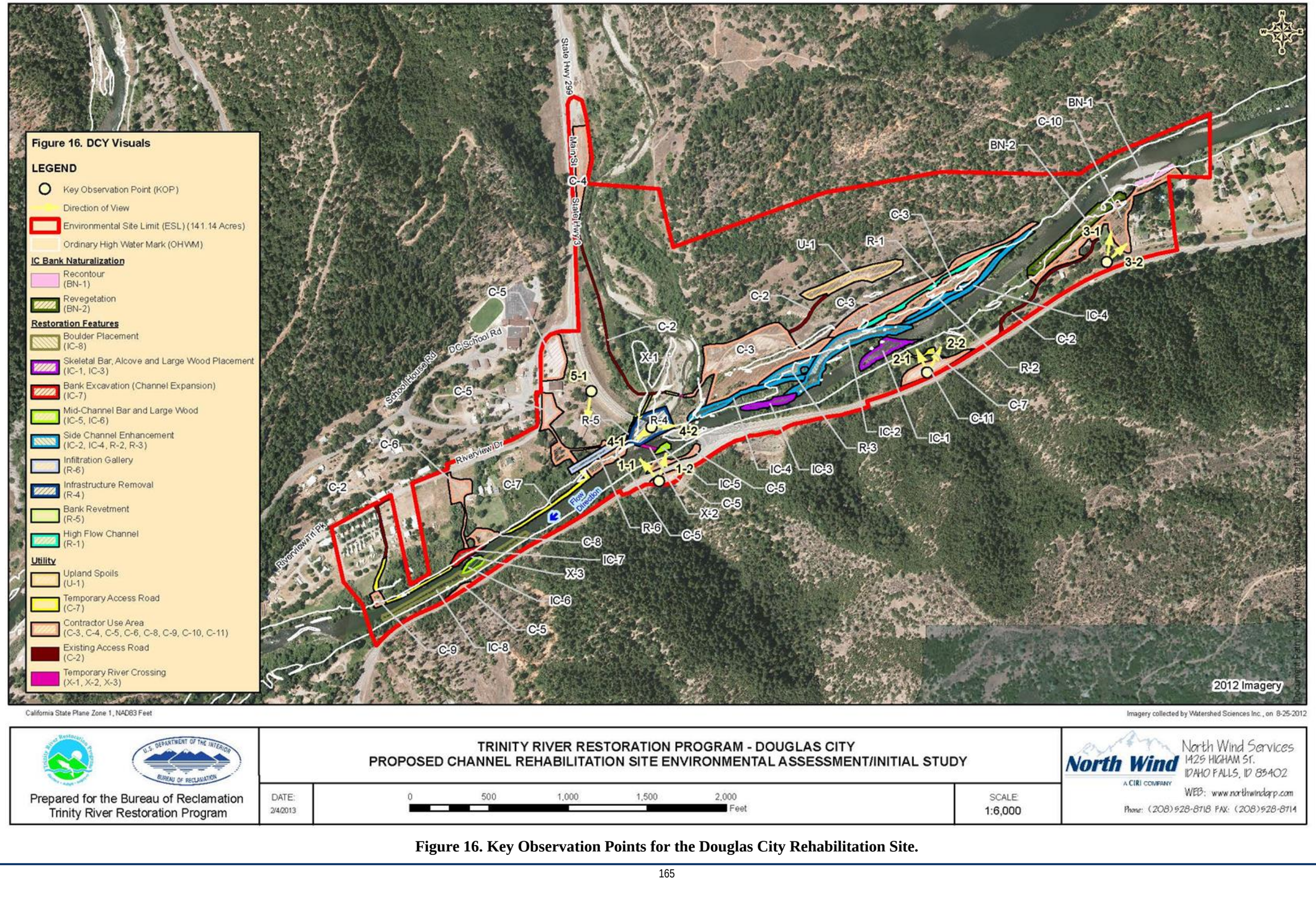

Figure 16. Key Observation Points for the Douglas City Rehabilitation Site.

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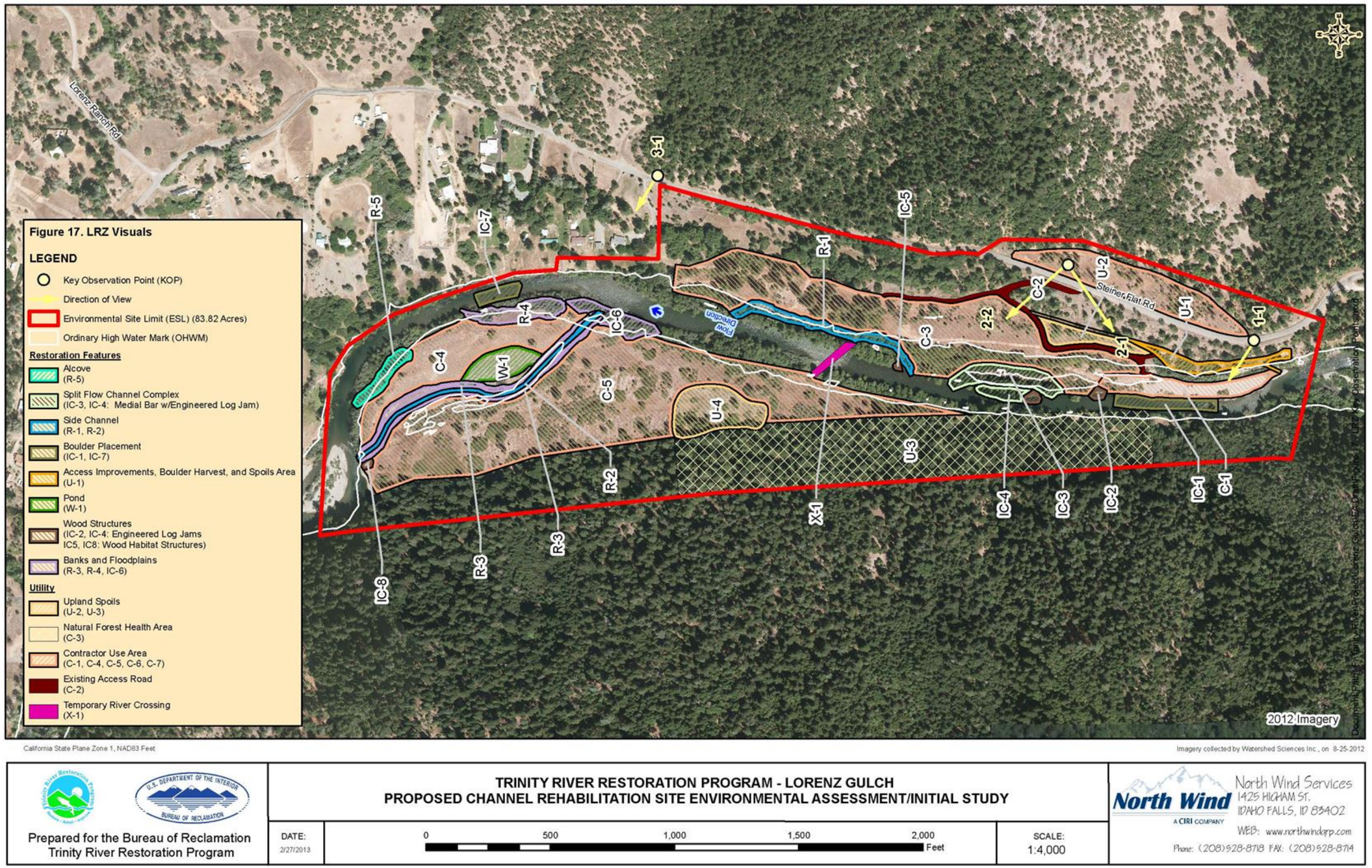

Figure 17. Key Observation Points for the Lorenz Gulch Rehabilitation Site.

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Table 19. Photographs of Views from Various Key Observation Points for the Douglas City Rehabilitation Site

Photo 1.

Photo 2.

Photo 3.

Photo 4.

Table 20. Photographs of Views from Various Key Observation Points for the Lorenz Gulch Rehabilitation Site

Photo 1.

Photo 2.

Photo 3.

Photo 4.

3.12.2 Environmental Consequences/Impacts and Mitigation Measures

3.12.2.1 Methodology

Analysis of potential impacts to aesthetic resources relative to the Proposed Project is based on the significance criteria described in Appendix G of the CEQA Guidelines (Association of Environmental Professionals 2008). The Regional Water Board, acting as the CEQA lead agency, has used these criteria to develop significance thresholds. Significance thresholds are used to evaluate the Proposed Project's potential impact on the visual character of the Proposed Project sites with an emphasis on VAUs that are selected to characterize the aesthetic values and visual resources. This section provides a general discussion of the type and magnitude of impacts that could occur as a result of the Project. The assessment is qualitative, with the potential impacts of activities at the Proposed Project sites evaluated in the context of the viewshed of the Trinity River corridor. A review of the consistency of the Proposed Project with federal and state Wild and Scenic River designations is presented in Appendix A of the Trinity River Master EIR.

3.12.2.2 Significance Criteria

The Project would have a significant impact if it:

- Obstructs a scenic view from public viewing areas;
- Has a substantial adverse effect on a scenic vista;
- Substantially damages scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- Substantially degrades the existing visual character or quality of the rehabilitation sites and their surroundings;
- Introduces physical features that are substantially out of character with adjacent residential areas;
- Alters the sites so that the scale or degree of change appears as a substantial, obvious, and disharmonious modification of the overall scenes (to the extent that they clearly dominate the view);
- Creates substantial daytime glare associated with new construction;
- Disrupts adjacent residential areas because of new night-time lighting;
- Creates a new source of substantial light or glare that would adversely affect day or nighttime views in the sites;
- Is inconsistent with the policies of the Trinity County and local general plans relating to aesthetics; or
- Is inconsistent with the goals and objectives of either the federal or state WSRA with regards to the Trinity River.

3.12.2.3 Impacts and Mitigation Measures

Table 21 summarizes the potential aesthetic impacts resulting from implementation of the No-Project alternative and Proposed Project.

Table 21. Summary of Potential Aesthetic Impacts for the No-Project and Proposed Project Alternatives

No-Project Alternative	Proposed Project	Proposed Project with Mitigation
Impact 3.12-1. Implementation of the project could result in the degradation and/or obstruction of a scenic view from key observation areas.		
No impact	Significant	Less than significant
Impact 3.12-2. Implementation of the project could substantially change the character of, or be disharmonious with, existing land uses and aesthetic features.		
No impact	Less than Significant	Not applicable[1]
Impact 3.12-3. The project may be inconsistent with federal and state WSRA or Scenic Byway requirements.		
No impact	Less than significant	Not applicable[1]
Impact 3.12-4. The project could generate increased daytime glare and/or nighttime lighting.		
No impact	Less than significant	Not applicable[1]

[1] Because this potential impact is less than significant, no mitigation is required.

Impact 3.12-1: Implementation of the Proposed Project could result in the degradation and/or obstruction of a scenic view from key observation areas.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, the degradation and/or obstruction of a scenic view from key observation areas would not occur as a result of construction activities because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

Potential impacts of Project activities would include changes brought about by the removal of vegetation, construction of inundated surfaces, new access roads, and the creation of staging and gravel processing areas. These various activities are intended to restore the form and function of an alluvial river, thereby enhancing the overall aesthetic values and visual resources associated with the Trinity River and the surrounding landscape. While the adverse impacts are expected to be temporary in nature and the long-term outcome should improve the visual diversity of the corridor, the short-term impacts would persist for some period. The impacts at the Douglas City site would be prolonged because not all of the activities at that site would be completed in 2013.

Motorists traveling on SR-3 on river left would have brief views of the Douglas City Project area. At the downstream end of the ESL vegetation screening along the road would obscure most of the Project area from view. Just downstream of the Douglas City Bridge, travelers would have brief views of the Project area as seen from KOP DCY1-1 and DCY1-2 (see Photo 1 in Table 19). Parts of activity areas IC-5, R-4, R-5, and R-6 could be visible by motorists passing this point. Farther upstream at KOP DCY2-1 and DCY2-2, motorists traveling on SR-299 could have brief views of Project work in the C-11 contractor use area in the foreground. Middleground views from this KOP may include the IC-1 area on river left as well as the IC-2, IC-4, R-1, and R-2 areas on river right. Vegetation along this stretch would afford only brief views of the Project area. At the upstream end of the ESL in the vicinity of the residential development, the bank naturalization work area (i.e., C-10, BN-1, and BN-2) would be visible to motorists traveling on SR-299 near KOP DCY3-2 (see Photo 2 in Table 19).

On the Douglas City Bridge, near the middle of the Douglas City Project area, motorists would have clear views of both the upstream and downstream portions of the Project area. From KOP DCY4-1, activity areas IC-5, R-4, R-5, and R-6 would be visible in the foreground with other Project work visible in middleground views. Activity areas IC-2, IC-3, IC-4, and R-3 would be visible in the foreground from KOP DCY 4-2 looking upstream into the Project area (see Photo 3 in Table 19). Construction equipment may also be visible in activity areas further upstream in middleground views from this KOP. Motorists traveling south along SR-299 at KOP DCY5-1 just north of the Douglas City Bridge (see Photo 4 in Table 19) would have brief views of the Project area. Activity areas C-5, R-4, R-5, and R-6 would be visible in the distance from this KOP. Along Steiner Flat Road, on river right, the river is at a lower elevation and work would generally be blocked by vegetation and residential development.

Views of the Project areas would be visible from residential areas within the Douglas City site. On river left at the upstream end of the ESL in the vicinity of KOP DCY3-1 and DCY3-2, private landowners would be able to see Project work at the C-10, BN-1, and BN-2 activity areas (see Photo 2 in Table 19). Work in this area would affect visual resources for the duration of the Project work.

On river right at the downstream end of the ESL there is another group of private residences. Although some of the construction activities may be visible from these residences, they would be partially obscured due to vegetation, topography, and distance.

Most of the Lorenz Gulch site would be obscured from view to travelers on Steiner Flat Road because the river, and thus Project area, in this stretch is at a lower elevation than the road. Some portions of the Project area are visible from the road at the southern end of the ESL but the Project area at the northern end of the ESL is not visible at all from the road, due to distance, topography, and vegetation. Vehicles and equipment working in activity areas C-1, U-1, and IC-1 might be visible from KOP LRZ1-1 (Photo 1 in Table 20). The views from this location would be brief as seen by motorists traveling along this route and would be buffered to some extent by topography and vegetation. Views from KOPs LRZ2-1 and LRZ2-2 (Photo 2 and Photo 3, respectively in Table 20) would be similarly brief. It is possible that activity areas C-2, U-2, and C-7 would be visible as motorists are passing this area. The Project area would not be visible from KOP LRZ3-1 (see Photo 4 in Table 20) due to topography, distance, and thick vegetation.

A few homes are located along Steiner Flat Road on river right overlooking the northern end of the Lorenz Gulch site. Both the homes and the road are set back some distance from the edge of the river and views from this location are buffered by vegetation, topography, and distance. Views from the homes on private land in the vicinity of KOP LRZ3-1 would be obscured by vegetation, distance, and vegetation as shown in Photo 4 in Table 20. Individuals walking out to the edge of the hill overlooking the river would have views of the Project site. Activity areas IC-6, IC-7, R-2, R-3, R-4, R-5, W-1, and C-4 could be visible from this vantage point.

Project-related visual changes at the sites would be apparent to in-channel recreationists. In-channel recreationists such as rafters would have unobstructed views of much of the in-channel construction as well as some of the upland Project activities where they are not blocked by dense riparian vegetation that is common to the Trinity River.

Impacts to aesthetics would be potentially significant, however because Proposed Project activities are intended to restore the form and function of an alluvial river, potentially adverse visual impacts occurring during construction would be temporary, lasting only until natural processes take over.

MITIGATION MEASURES

Project implementation could result in degradation and/or obstruction of a scenic view from key observation areas. In order to minimize impacts to visual resources resulting from the removal of vegetation at the sites, mitigation measures 4.7-1a, 4.7-1b, and 4.7-1c, as described in Section 3.7 (Vegetation, Wildlife, and Wetlands), will be implemented where applicable. Visual impacts related to water quality (e.g., the potential for increased turbidity to adversely impact the aesthetic quality of the river) would be mitigated through the implementation of mitigation measures 4.8-3a, 4.8-3b, 4.8-3c, 4.8-3d, 4.8-3e, and 4.8-3f, as discussed in Section 3.8 (Recreation), where applicable. Implementation of the specified mitigation measures would reduce the impacts to less than significant.

Impact 3.12-2: Implementation of the Proposed Project could substantially change the character of, or be disharmonious with, existing land uses and aesthetic features.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, no construction would occur at the Proposed Project sites. No changes would occur to the character or harmony of aesthetic features and existing land uses. Therefore, there would be no impact.

PROPOSED PROJECT

Activities associated with the Proposed Project are intended to be not only functional (e.g., enhance fisheries and restore river sinuosity), but to complement the aesthetic values and visual resources associated with the rehabilitation sites. Overall, the Proposed Project incorporates the diversity of landscapes and vegetation types to define the location, character, and magnitude of the rehabilitation activities at the sites. For example, materials excavated from riverine areas would be removed to upland areas or used as a source of coarse sediment to enhance the alluvial function of the river. Material transported to upland activity areas would be placed in a manner that blends the materials into the contours of the topography. Retention of existing topographic features would significantly lessen the degree of visual impact.

The activities described in Chapter 2 provide a framework for reestablishing the physical processes necessary to enhance the alluvial attributes of the river channel and floodplain over time, particularly those attributes that are flow dependent. Over time, the Proposed Project would produce gradual, ever-improving changes in the aesthetic quality of this reach of the Trinity River, while maintaining the character of the surrounding land uses. Because changes associated with the Proposed Project would retain the character of existing land uses and features, implementation would result in a less than significant impact on aesthetic resources.

Impact 3.12-3: The Proposed Project may be inconsistent with the federal or state WSRA or Scenic Byway requirements.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, no construction activities would occur. No changes would occur that would be inconsistent with the federal or state WSRA or Scenic Byway requirements. Therefore, there would be no impact.

PROPOSED PROJECT

Under Section 7 of the WSRA, direct and adverse effects to the values for which the Trinity River was recognized as a Wild and Scenic River are prohibited. Project implementation would be consistent with these values because the activities would not be considered substantially out of character with the current aesthetic conditions. Implementation of the Proposed Project would result in a less than significant impact to WSRA and Scenic Byway requirements.

Impact 3.12-4: The Proposed Project could generate increased daytime glare and/or nighttime lighting.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, no changes in daytime glare or nighttime lighting would occur because the Project would not be implemented. Therefore, there would be no impact.

PROPOSED PROJECT

Under the Proposed Project, significant increases in daytime glare and/or nighttime lighting are not anticipated to occur. Construction activities would not take place during nighttime hours; therefore, nearby homes and motorists traveling on roads adjacent to the river corridor would not be subjected to the headlights of construction equipment or stationary spotlights. Material removed from the floodplain and deposited at various activity areas is generally not reflective and would not increase the level of daytime glare observable to the viewer. Some changes may occur in the locations and amounts of glare produced by water over the constructed inundation surfaces, but, overall, these changes would be short-lived and variable by day, as well as season. These effects would be prolonged at the Douglas City site because activities would not all occur in 2013. The impacts of these changes would be less than significant.

The most likely viewer group to be affected by daytime glare would be residents at the Douglas City site if they are present during daytime hours. Residents at the Lorenz Gulch site are less likely to be affected because of the topography, distance, and existing vegetation between the residences and the river. Occurrences of daytime glare produced by the sun reflecting off the water or construction equipment would be of short duration. Such an impact would be less than significant.

3.13 Hazards and Hazardous Materials

3.13.1 Affected Environment/Environmental Setting

This section evaluates hazards and hazardous materials that may currently be present within the Proposed Project site boundaries. The potential for using hazardous materials or generating hazardous waste in conjunction with rehabilitation activities is discussed in the Trinity River Master EIR (Section 4.13). Hazardous materials and the potential for health hazards to be generated by implementation of the Proposed Project are also assessed in this section.

HAZARDOUS MATERIAL AND HAZARDOUS WASTE

Federal, state, and local agencies regulate hazardous materials and hazardous waste. Nonetheless, illegal storage and disposal and unintentional releases of hazardous materials or waste from leaks and accidents can occur when hazardous materials are used or hazardous waste is generated by a project. Regional roadways including SR-299 and Red Hill Road are frequently used to transport hazardous materials throughout Trinity County. Under the California Code of Regulations (CCR), Title 13, Section 1150-1194, and CFR, Title 49, the California Highway Patrol (CHP) regulates the transport of hazardous materials. When a spill of hazardous material or waste occurs on a highway, the CHP is responsible for directing cleanup and enforcement (CCR Section 2450-2453b).

ROADWAYS AND EVACUATION ROUTES

The Proposed Project sites are immediately adjacent to SR-299, SR-3, Riverview Drive, and Lower Steiner Flat Road, and access to the sites would be made from these roads. These roads would also serve as the primary evacuation routes for the sites.

WILDLAND FIRE

Steep topography and a mosaic of mixed-conifer, hardwood, and chaparral woodlands coupled with typically hot, dry summers create extreme fire danger throughout most of Trinity County. Human-caused fires, particularly along roadways and other developed areas, are relatively common, although the county is also frequently subject to lightning-caused fires. Wildland fire, regardless of the cause, can be detrimental to watershed function, killing vegetation, burning the

organic matter in litter and soil, and forming impervious soil layers, factors that contribute directly to accelerated runoff and erosion from the watershed during and immediately after a storm event.

Trinity County fire protection needs are met by 16 volunteer fire departments (VFDs) dispersed throughout the county, Cal Fire, and the USFS. Cal Fire is responsible for wildland fire protection on all private lands in Trinity County, and the USFS is responsible for wildland fire protection on all National Forest lands. However, Cal Fire also contracts with the BLM to provide wildland fire protection on its public lands. The Douglas City VFD provides services within the Douglas City area and is responsible for structural fire protection and rescue services in Trinity County throughout the year.

FLOODING AND SEISMIC EVENTS

A review of the FEMA FIRMs indicates that the sites are within an area for which the BFEs have been determined and the sites are in a designated floodway. Areas designated by FEMA as being within "Zone X," are subject to a 100-year flood with average depths of less than 1 foot or with drainage areas of less than 1 square mile. Trinity River flows through these sites are moderated by the TRD below Lewiston Dam.

Infrequently, seismic events occur in the region generally in the form of low to moderate levels of ground shaking associated with nearby or distant earthquakes. The potential for landslides triggered by seismic events is not significant within the corridor of the mainstem Trinity River, due to the low level of historical occurrence of seismic activity in the region. However, the steep topography and shallow, erosive soils found in much of the region increase the potential for landslides and rockfalls triggered by seismic events, precipitation, or other types of disturbances. Seismic activity known to occur in the region is discussed in the Trinity River Master EIR (Sections 4.3 and 4.13), including a detailed discussion of geologic hazards that could be associated with rehabilitation sites.

3.13.2 Environmental Consequences/Impacts and Mitigation Measures

3.13.2.1 Methodology

Hazards and hazardous materials associated with the rehabilitation sites were assessed in the field by TRRP staff. In addition, Trinity County Planning Department and Environmental Health Department staff will be consulted regarding the potential for hazardous substances to occur in the general vicinity of the site boundaries.

3.13.2.2 Significance Criteria

An impact related to hazards and hazardous materials would be significant if the Project would:

- Involve the use, production, or disposal of materials that pose a hazard to people or to animal or plant populations in the area affected;
- Create a substantial potential public health or safety hazard due to risk of upset (accidents);
- Create a substantial potential public health or safety hazard due to a reasonably foreseeable release of hazardous materials and/or hazardous waste (i.e., from contaminated soil);
- Violate applicable laws intended to protect human health and safety or expose employees to working situations that do not meet health standards;
- Physically interfere with, or impair implementation of, emergency response plans or emergency evacuation plans;

- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Be located on a site that is included on a list of hazardous materials sites compiled pursuant to *California Government Code* Section 65962.5 and, as a result, create a significant hazard to the public or the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school; or
- Expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

3.13.2.3 Impacts and Mitigation Measures

Table 22 summarizes the potential hazards and hazardous materials impacts that could result from implementation of the No-Project alternative and Proposed Project.

Table 22. Summary of Hazards and Hazardous Materials Impacts for the No-Project and Proposed Project Alternatives

NO-PROJECT ALTERNATIVE	PROPOSED PROJECT	PROPOSED PROJECT WITH MITIGATION
Impact 3.13-1. Implementation of the project could increase the potential for release of, or exposure to, potentially hazardous materials that could pose a public health or safety hazard.		
No impact	Less than significant	Not applicable[1]
Impact 3.13-2. Construction activities associated with the project may interfere with emergency response and evacuation plans by temporarily slowing traffic flow.		
No impact	Less than significant	Not applicable[1]
Impact 3.13-3. Implementation of the project may contribute to wildland fire potential and catastrophic fire behavior in the project area.		
No impact	Less than significant	Not applicable[1]
Impact 3.13-4. Implementation of the project may contribute to an increased risk of landslides and flooding.		
No impact	Less than significant	Not applicable[1]

[1] Because this potential impact is less than significant, no mitigation is required.

Impact 3.13-1: Implementation of the Proposed Project could increase the potential for release of, or exposure to, potentially hazardous materials that could pose a public health or safety hazard.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, construction activities that could potentially release hazardous substances (e.g., oil, gas, diesel, and mercury) into the environment at levels that could pose a health or safety hazard to the public would not occur because the Project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

Activities associated with the Proposed Project would utilize potentially hazardous materials (e.g., oil and fuels) associated with the operation of vehicles and construction equipment during Project implementation. These materials are similar to those routinely used for other types of construction projects throughout Trinity County. The widespread use and associated transport of these materials along the highways and county roads that traverse Trinity County, combined with the low level of incidents (spills), suggest that impacts related to rehabilitation activities would be

similar to that elsewhere in Trinity County. Implementation of BMPs would minimize the potential for any Project-related hazardous materials becoming a public hazard. This impact would be less than significant; therefore, no mitigation is required.

Impact 3.13.2: Construction activities associated with the Proposed Project may interfere with emergency response and evacuation plans by temporarily slowing traffic flow.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, construction activities that could interfere with emergency response and evacuation plans would not occur because the Project would not be implemented. Therefore, there would be no impact.

PROPOSED PROJECT

Under the Proposed Project, construction traffic would include the mobilization and demobilization of construction equipment (e.g., scrapers, excavators, and bulldozers) to and from the site over the course of the construction period. At the Douglas City site, mobilization and demobilization would occur in 2013 as well as at a later date for the remainder of the activities not completed in 2013. Once the equipment is on the site, construction traffic would be limited to daily trips for personnel and routine service and supply vehicles. Construction activities would be managed to ensure that emergency response and evacuation plans are not impeded. The impacts created would be less than significant; therefore, no mitigation is required.

Impact 3.13.3: Implementation of the Proposed Project may contribute to wildland fire potential and catastrophic fire behavior in the Project area.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, there would be no impact on wildland fire potential or catastrophic fire behavior because the Project would not be implemented. Therefore, there would be no impact.

PROPOSED PROJECT

The proposed activities described in Chapter 2 would occur within or adjacent to the riparian corridor of the Trinity River. Potential fuels within the boundaries of the sites (e.g., grasses and herbaceous weeds) are generally noncontiguous and the river serves as a substantial natural firebreak. The types and amounts of fuels and their continuity may be decreased temporarily by implementation of this alternative, particularly in areas subject to vegetation removal, but any such changes would not be significant with respect to fire potential and behavior. In the long-term, potential fire conditions would be similar to those that currently exist (e.g., potential fuels would be limited to riparian vegetation, sporadic grasses, and herbaceous weeds). Proposed Project implementation would have a less than significant impact on wildland fire potential and behavior; therefore, no mitigation is required.

Impact 3.13.4: Implementation of the Proposed Project may contribute to an increased risk of landslide or flooding.

NO-PROJECT ALTERNATIVE

The No-Project alternative would have no impact on the potential for landslides or flooding because the Project would not be implemented. Therefore, there would be no impact.

PROPOSED PROJECT

Under the Proposed Project, most of the activities described in Chapter 2 would take place in the river channel or floodplain, both of which have relatively flat topography. Furthermore, the alternative does not involve alteration of toe-slopes adjacent to any geologically unstable areas (e.g., landslides). Proposed Project implementation would result in either no change to the BFE or a reduction of the BFE, since stockpiled excavated material would be stored in the adjacent uplands. The potential for flooding would not be increased at the Proposed Project sites. These impacts would be less than significant; therefore, no mitigation is required.

3.14 Noise

This section evaluates the potential noise impacts associated with implementation of the Proposed Project. The evaluation is based on a review of local land use plans and policies pertaining to noise and field reconnaissance used to identify potential sensitive receptors within and adjacent to the boundaries of these sites. A detailed discussion of methodology used to quantify noise is provided in the Trinity River Master EIR (Section 4.14).

3.14.1 Affected Environment/Environmental Setting

Noise is generally defined as excessive and unwanted sound emanating from noise-producing objects. Total environmental noise exerts a sound pressure level that is generally measured with an A-weighted decibel scale (dBA), which approximates the range of sound audible to the human ear (where 10 dBA is at the low threshold of hearing and 120-140 dBA is the threshold of pain). Human responses to noise are subjective and can vary. The subjective effects of noise are difficult to measure as are the corresponding reactions of annoyance and dissatisfaction. Individual tolerance thresholds vary widely based on an individual's past experiences with noise. Intensity, duration, frequency, time pattern of noise, and existing background noises are some factors that can influence individual responses to noise. Table 4.14-1 of the Trinity River Master EIR lists examples of dBA levels for a range of noises and Table 4.14-2 lists the U.S. General Services Administration maximum noise levels allowed for government contract construction activities. Typical construction noise levels that could occur at the rehabilitation sites are shown in Table 23. The noise levels shown in this table assume the operation of various types of construction equipment, as shown in Table 24.

Table 23. Typical Construction Noise Levels

CONSTRUCTION STAGE	NOISE LEVEL (DBA, L_{EQ})[1]
Ground clearing	84
Excavation	89
Hauling	88
Revegetation	65

[1] Average noise levels 50 feet from the noisiest source and 200 feet from the rest of the equipment associated with a given construction stage. Noise levels correspond to public works projects (50 dBA ambient environments) (Bolt et al. 1971).

Table 24. Construction Equipment Noise	
TYPE OF EQUIPMENT	**MAXIMUM LEVEL (DBA AT 50 FEET)**
Truck	75
Scrapers	80
Bulldozers	75
Backhoe	75
Pneumatic tools	80

Source: Sincero and Sincero 1996

Noise is not considered a problem in Trinity County. A community noise survey was conducted in Trinity County in 2002 (Brown-Buntin 2002) as part of an update that was being developed for the noise element of the County's General Plan. The community noise survey results indicate that typical noise levels in noise-sensitive areas range from approximately 44 to 52 decibel (dB) Ldn[10]. These are low noise levels and are typical of small communities and rural areas. Maximum noise levels observed during the survey were generally caused by local automobile traffic or heavy trucks. Other sources of maximum noise levels included occasional aircraft and construction activities. Background noise levels in the absence of these maximum-noise generating sources are largely attributable to distant traffic, water, wind, livestock, birds, and insects.

Noise-sensitive receptors that have been identified in the general vicinity of the Proposed Project sites include private residential areas; persons, primarily recreationists (e.g., hikers, picnickers, anglers, and rafters); and wildlife that use the Trinity River corridor. Noise tolerance levels for these groups are subjective, varying widely between individuals.

The Douglas City Rehabilitation Site is located adjacent to SR-299, SR-3, and Riverview Drive and the Lorenz Gulch Site is located adjacent to Lower Steiner Flat Road. Traffic from these roads would be heard passing by both of these sites; traffic-generated noise would be buffered by vegetation and topography.

The residential developments present at the Douglas City Rehabilitation Site represent a sensitive noise receptor as do the residences just outside the boundary of the Lorenz Gulch Rehabilitation Site on river right. Residential areas are subjected to varying degrees of ambient noise levels from the river (including recreationists) and intermittent traffic using roads in the Project vicinity. Because the homes at Douglas City sit upslope of the floodplain, noise from the river can be readily apparent. The homes adjacent to the Lorenz Gulch site are located farther away from the river edge and thus noise levels from construction would be less apparent. Existing vegetation would provide a buffer for some of the noise that would be generated at the site's river-side activity areas.

To varying degrees, construction vehicles entering and leaving the sites would temporarily increase traffic levels and, thus, ambient noise levels along the roads adjacent to the sites. Homes in the area may experience some increased ambient noise levels during construction, but in general, noise levels would be buffered somewhat by distance, topography, and vegetation.

[10]dB L_{dn} = The average equivalent sound level during a 24-hour day, obtained after addition of 10 A-weighted decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m. A-weighted decibels, abbreviated dBA, or dBa, or dB(a), are an expression of the relative loudness of sounds in air as perceived by the human ear.

3.14.2 Environmental Consequences/Impacts and Mitigation Measures

3.14.2.1 Methodology

Since the Proposed Project would not result in a noticeable increase in traffic volume, construction-related noise is the focus of this impact analysis. Construction noise impacts are based on an assumed mixture of construction equipment and related noise levels. Assumptions related to construction equipment and industry noise averages were used to evaluate construction-related noise impacts, including noise levels at the nearest sensitive receptors.

3.14.2.2 Significance Criteria

Based on Appendix G of the CEQA Guidelines (Association of Environmental Professionals 2008) the Proposed Project would have a significant direct noise impact if it would result in:

- Exposure of persons to, or generation of, excessive ground-borne vibration or ground-borne noise levels;
- A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project;
- A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above existing levels; or
- Exposure of persons to, or generation of, noise levels in excess of standards established in the Trinity County General Plan noise element, or applicable standards of other agencies.

3.14.2.3 Impacts and Mitigation Measures

Table 25 summarizes the potential noise impacts resulting from implementation of the No-Project alternative and Proposed Project.

Table 25. Summary of Potential Noise Impacts for the No-Project and Proposed Project Alternatives

NO-PROJECT ALTERNATIVE	PROPOSED PROJECT	PROPOSED PROJECT WITH MITIGATION
Impact 3.14-1. Construction activities associated with the proposed project would result in noise impacts to nearby sensitive receptors.		
No impact	Significant	Less than significant

Impact 3.14-1: Construction activities associated with the Proposed Project would result in noise impacts to nearby sensitive receptors.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, no change in ambient noise levels would occur because the Project would not be implemented. Therefore, there would be no impact.

PROPOSED PROJECT

During the construction phase of the Project, noise from construction activities would temporarily dominate the noise environment in the immediate area of the sites. Construction activities would generate maximum noise levels ranging from 65 to 84 dBA at a distance of 50 feet, although intervening terrain and vegetation could reduce these noise levels. Construction noise would be temporary and is expected to occur primarily between the months of July and December. Because activities at the Douglas City site would be implemented in 2013 as well as at a later date, there

would be two distinct timeframes wherein noise levels would be increased. There would be no permanent noise impacts resulting from implementation of the Proposed Project.

Residences located near both sites would be subjected to varying degrees of construction noise. It is not anticipated that ground vibration created by Project activities would be detectable at any sensitive receptor location nor would it result in any structural damage. Recreational users in the general vicinity of the sites could encounter increased ambient noise levels during construction activities. While such an increase in noise would be significant, its impact would be temporary and localized.

MITIGATION MEASURES

Construction activities associated with the Project would result in noise impacts to nearby sensitive receptors. Therefore, mitigation measures 4.14-1a, 4.14-1b, and 4.14-1c described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of the specified mitigation measures would reduce the impacts to less than significant.

3.15 Public Services and Utilities/Energy

This section addresses the public services and utilities associated with the Proposed Project sites and evaluation of the impacts on these resources from implementation of the Proposed Project. These resources are described in the Trinity River Master EIR, Section 4.15.

3.15.1 Affected Environment/Environmental Setting

WATER SUPPLY AND DISTRIBUTION

Community and private water systems serve development in the Douglas City community. The Weaverville Community Services District serves several residences and the two mobile home parks in Douglas City. Private water systems serve the residences adjacent to the Lorenz Gulch site. The majority of the residential, commercial, and recreational developments within or adjacent to the sites are served by private water systems that derive water from individual wells, springs, and river-intake systems. Surface water sources are more frequently used for domestic purposes along the river corridor than groundwater sources and often require varying levels of treatment prior to use.

SURFACE WATER

The Trinity River is the primary surface water body at the rehabilitation sites. Surface water is used primarily for domestic purposes, including gardens, livestock, and fire protection. The TRRP has been working with landowners in the general vicinity of rehabilitation sites to relocate surface water intake systems affected by post-ROD flows.

GROUNDWATER

Groundwater wells provide water for domestic and commercial purposes in the vicinity of the Proposed Project sites. Due to the location and nature of the terrain, groundwater levels respond generally to river stage. Geologic investigations conducted for the Project suggest that groundwater levels fluctuate seasonally with river flows. Some domestic water sources collect groundwater from deep wells. Project activities have been designed to ensure that known groundwater wells are avoided.

SOLID WASTE COLLECTION AND DISPOSAL

Trinity County operates nine solid waste transfer stations throughout the county, where waste is collected for shipment by truck to the Anderson Landfill in Shasta County. Solid waste collected from the rehabilitation sites would be transported by truck either to the Weaverville transfer station or to the landfill located in Anderson.

FIRE PROTECTION AND EMERGENCY SERVICES

Cal Fire, BLM, and USFS provide fire protection services throughout Trinity County. Cal Fire generally provides fire protection services between May and late October. During the winter, Cal Fire responds from Weaverville with one engine, if personnel are present. During the summer, Cal Fire is equipped to provide three engines with 2,250 gallons of water and 12 to 13 firefighters. Minimum response time is 15 to 20 minutes on average. Half of these responses are typically for structure or flue fires and half are for wildland fires.

The Douglas City VFD provides fire protection services for the areas surrounding the Proposed Project sites. This VFD is the primary fire protection agency for structural fires; it maintains a fire station in the Douglas City community core area with two engines and a quick response vehicle with a 200-gallon slip-on tank. This VFD maintains a second fire station in the Poker Bar-Vizhum Grade area that is supported by volunteers from the local response area. The second station has one engine and a service truck.

SCHOOLS

The Douglas City Elementary school consists of grades kindergarten through eight. The Douglas City Elementary school district provides bus service for residents in this community. Bus service is provided throughout the local communities for students attending Trinity High School in Weaverville.

3.15.2 Environmental Consequences/Impacts and Mitigation Measures

3.15.2.1 Methodology

The analysis addresses potential impacts from implementation of activities at the Proposed Project sites on a number of public services and facilities that are described in detail in the Trinity River Master EIR. The analysis qualitatively addresses potential impacts on energy resources resulting from substantial or wasteful energy use during Project construction. The analysis is based on a review of planning documents applicable to the sites and field reconnaissance.

3.15.2.2 Significance Criteria

The Project would normally have a significant impact on public services or utilities under CEQA if it would:

- Not comply with published national, state, or local statutes, regulations, or standards relating to solid waste;
- Interfere with emergency services;
- Degrade the level of service of a public service or utility;
- Require relocating infrastructure;
- Result in substantial adverse physical impacts associated with the provision of, or need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios; response

times; or other performance objectives for fire protection, police protection, schools, parks, or other public services;
- Require substantial improvements to the infrastructure or level of staffing of a public service or utility to maintain its existing level of service;
- Require or result in the construction of new water treatment, wastewater treatment, or storm water drainage facilities, or the expansion of such existing facilities, the construction of which could cause significant environmental effects;
- Be served by a landfill without sufficient permitted capacity to accommodate the Project's solid waste disposal needs;
- Disrupt utilities service to create a public health hazard or extended service disruption; or
- Encourage activities that result in the use of large amounts of fuel or energy, or would use fuel or energy in a wasteful manner.

3.15.2.3 Impacts and Mitigation Measures

Table 26 summarizes the potential impacts on public services and utilities that could result from implementation of the No-Project alternative and Proposed Project.

Table 26. Summary of Public Services and Utilities Impacts for the No-Project and Proposed Project Alternatives

NO-PROJECT ALTERNATIVE	PROPOSED PROJECT	PROPOSED PROJECT WITH MITIGATION
Impact 3.15-1. Implementation of the project could disrupt existing electrical and phone service during construction activities.		
No impact	Less than significant	Not applicable[1]
Impact 3.15-2. Construction of the project could result in the generation of increased solid waste.		
No impact	Less than significant	Not applicable[1]
Impact 3.15-3. Implementation of the project could result in disruption to emergency services, school bus routes, or student travel routes during construction activities.		
No impact	Significant	Less than significant
Impact 3.15-4. Construction of the project could result in a substantial use of nonrenewable energy resources.		
No impact	Less than significant	Not applicable[1]

[1] Because this potential impact is less than significant, no mitigation is required.

Impact 3.15-1: Implementation of the Proposed Project could disrupt existing electrical and phone service during construction activities.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, no construction-related disruption to existing electrical or telephone service would occur because the Project would not be implemented. Therefore, there would be no impact.

PROPOSED PROJECT

Under the Proposed Project, no activities would occur to disrupt electrical or telephone service within or adjacent to the sites. Utility poles and/or underground lines located within the boundaries of the sites would be identified by the TRRP, and activities described in Chapter 2 have been designed to avoid impacts to these facilities. A number of electrical and phone lines cross access roads to the sites, typically in a manner that provides adequate vehicular clearance for phone

and utility lines. These clearances would be adequate to allow access by construction equipment. Potential impacts on electrical and phone utilities and services at the Proposed Project sites as a result of Project implementation would be less than significant; therefore, no mitigation is required.

Impact 3.15-2: Construction of the Proposed Project could result in the generation of increased solid waste.

NO-PROJECT ALTERNATIVE

Increased quantities of solid waste would not be generated under the No-Project alternative because there would be no construction activities. Therefore, there would be no impact.

PROPOSED PROJECT

Under the Proposed Project, construction would result in the generation of solid waste associated with the removal of substantial amounts of vegetation and other construction-related waste (e.g., garbage, containers, and oil). Vegetative materials (e.g., stumps, roots, and branches) would be disposed of within the sites. Disposal methods for vegetative materials could include chipping to provide mulch, burial, piling to provide wildlife habitat on site, burning, or integration into the activity areas to provide structural habitat for juvenile fish. Solid waste generated by construction activities would either be disposed of at a local transfer station (Weaverville) or transported by truck to the Anderson Landfill in Shasta County. The Anderson Landfill currently has sufficient capacity and the necessary permits to accommodate non-hazardous construction waste. The contractor would be responsible for ensuring appropriate disposal of any hazardous waste, as approved by Reclamation. Disposal of potentially hazardous waste is evaluated in Section 3.13, Hazards and Hazardous Materials.

Temporary access routes built for Project implementation would be closed and/or decommissioned to ensure that the number of public access points on public lands would not increase, which could require the provision of public services (e.g., solid waste disposal) at locations that are inconsistent with agency management plans, guidelines, and policies. The Trinity River Recreation Activity Management Plan (1983) currently indicates no authorized vehicle access for launching boats at the Hidden Bar area although use of this area is occurring via two unauthorized roads. With construction of this rehabilitation site, motorized travel would be officially authorized to Hidden Bar, and as funding allows, new facilities may be developed by the BLM. This could increase use of the area but it is not expected to result in a significant impact to public services. Therefore, this impact would be less than significant.

Impact 3.15-3: Implementation of the Proposed Project could result in disruption to emergency services, school bus routes, or student travel routes during construction activities.

NO-PROJECT ALTERNATIVE

Since there would be no construction activities associated with implementation of the No-Project alternative, emergency services, school bus routes, and student travel routes would not be disrupted. Therefore, there would be no impact.

PROPOSED PROJECT

Construction activities at the sites would be confined within the site boundaries described in Chapter 2. Construction personnel and service vehicles would use designated routes to and from the sites. Traffic control associated with site activities would be minimal and is not expected to

cause more than minimal disruptions to public services. Access for mobilization and demobilization of heavy equipment, however, may require a higher level of traffic control for local roadways and may disrupt traffic flow and circulation before, during, and after construction. Therefore, effects on emergency services, school bus routes, and student travel routes resulting from heavy equipment would be significant. At the Douglas City site, impacts could occur during two different time periods.

No road/bridge closures are planned for Project implementation; however, in the event that it becomes necessary to temporarily close a road or bridge as a result of proposed activities, the road/bridge closures would occur during non-peak hours to avoid traffic circulation impacts associated with emergency services and school bus services. A closure, even during non-peak hours (i.e., 11:00 p.m. to 6:00 a.m.) could have the potential to increase significantly the response time for law enforcement, fire protection, and other emergency services. In the event that road closures would be required during the school year (mid-August through mid-June), these closures could delay school bus service, where it exists. While this impact would be temporary, it could interfere with student access to bus service and, thus, school attendance. Because of the potential for temporary traffic controls on local roadways, increased response time for emergency services, and interference with student travel, the impact would be significant.

MITIGATION MEASURES

Implementation of the Project could result in disruption to emergency services, school bus routes, or student travel routes during construction activities. Therefore, mitigation measures 4.15-3a, 4.15-3b, and 4.15-3c described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of the specified mitigation measures would reduce the impacts to less than significant.

Impact 3.15-4: Construction of the Proposed Project could result in a substantial use of nonrenewable energy resources.

NO-PROJECT ALTERNATIVE

No use of nonrenewable energy resources would occur under the No-Project alternative because construction activities would not occur. Therefore, there would be no impact.

PROPOSED PROJECT

Energy expenditures associated with construction at the sites would include both direct and indirect uses of energy. Combustion of the refined petroleum products needed to operate construction equipment would be part of the direct energy use. Indirect energy use typically represents about three-quarters of total construction energy usage, with direct energy use constituting the remaining quarter. Though construction energy would be consumed only during the construction phase, it would represent an irreversible consumption of finite natural energy resources.

Construction would directly consume fuel and electricity. Construction would also indirectly consume fuel and electricity because of the energy used to provide the materials necessary for construction. Fuel would be consumed by both construction equipment and construction-worker vehicle trips. Minor electrical use might be required for some construction equipment, such as welding machines, power tools, and pumps.

Construction energy consumption would be a short-term impact and would not be an ongoing drain on finite natural resources. Construction would consume energy primarily in the form of fuel from local commercial sources and would not have a significant effect on local or regional energy sources. Therefore, this impact would be less than significant.

3.16 Transportation/Traffic Circulation

This section describes the existing transportation and traffic conditions in proximity to the Proposed Project sites and evaluates the potential impacts to transportation resources and traffic circulation from implementation of the Proposed Project.

3.16.1 Affected Environment/Environmental Setting

Regional and local roadways and circulation in the vicinity of the Proposed Project sites are described in Section 4.16 of the Trinity River Master EIR. Table 27 identifies and characterizes the access roads for the sites. Based on reconnaissance information provided by TRRP staff and members of the design team, the roads identified in the table are maintained to varying degrees by the responsible party. No improvements to these roads are anticipated from proposed activities.

Table 27. Roadway Characteristics for Potential Access Roads Serving the Proposed Project Sites

Road Name	Ownership	Surface Type	Roadway Class	Traffic Counts (ADT)
SR-299	State	Paved	Highway/ Scenic Byway	4,450
Steiner Flat Road	County	Paved	Local/ Residential	1,290
Riverview Drive	County	Paved	Local/Residential	324

Sources: Caltrans Information: http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/2007; Smith, pers. comm. 2008

SR-299 is a designated truck route between the Sacramento Valley and the coastal communities of northern California. It is the main access corridor to Trinity County and provides primary access to the Trinity River, including the Proposed Project sites. Steiner Flat Road and SR-299 are located in the vicinity of the sites. These roads are part of Trinity County's road system and provide access to residential areas and federal and private timberlands via SR-299. There are a number of private roads that serve residences and provide access for forest management activities. Public access is often restricted by private landowners. In addition to using existing roads to access the rehabilitation sites, roads within the boundaries of the sites would be used to support various activities. New temporary access roads would be required to provide access for construction and monitoring activities.

Bicycle, pedestrian, and equestrian circulation is limited in the communities and residential neighborhoods that have developed along the Trinity River below Lewiston Dam. The Douglas City Community Plan contains goals to increase bicycle, pedestrian, and equestrian travel in this planning area. These community plan goals have not yet been implemented. However, pedestrians and equestrians use county and private roads that are adjacent to the river for exercise and recreational pursuits including Steiner Flat Road, Riverview Drive, Poker Bar Road, Reo Lane, and Steel Bridge Road.

3.16.2 Environmental Consequences/Impacts and Mitigation Measures

3.16.2.1 Methodology

A qualitative assessment of traffic impacts was performed, based on the construction procedures and equipment that would be used, local transportation policies, site review of existing conditions, and traffic levels on key roadways.

3.16.2.2 Significance Criteria

Significance criteria were developed based on Appendix G of the CEQA Guidelines, as well as Project-specific issues identified during the scoping process (e.g., access during construction). Significant construction-related impacts would result if the Project would:

- Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections);
- Exceed, either individually or cumulatively, a level of service standard established by the county for designated roads or highways;
- Affect the form or function of SR-299, specifically bridges extending over the Trinity River and its tributaries;
- Affect the form or function of bridges under the jurisdiction of Trinity County or private parties;
- Disrupt existing traffic operations, including vehicular and bicycle traffic;
- Significantly degrade the existing conditions of local private roads;
- Obstruct access to adjacent land uses, including emergency access;
- Affect the operation of the local transit system;
- Conflict with adopted policies, plans, or projects supporting alternative transportation;
- Pose a safety hazard to motorists, bicyclists, equestrians or pedestrians;
- Cause substantial damage to or wear of public and private roadways; or
- Reduce available parking capacity.

3.16.2.3 Impacts and Mitigation Measures

Table 28 summarizes the potential transportation and traffic impacts that would result from the No-Project and Proposed Project alternatives.

Table 28. Summary of Potential Transportation Impacts for the No-Project and Proposed Project Alternatives

NO-PROJECT ALTERNATIVE	PROPOSED PROJECT	PROPOSED PROJECT WITH MITIGATION
3.16-1. Construction activities would reduce/close existing traffic lanes.		
No impact	Less than significant	Not applicable[1]
3.16-2. Construction activities would generate short-term increases in vehicle trips.		
No impact	Significant	Less than significant
3.16-3. Implementation of the project would obstruct access to adjacent land uses.		
No impact	Less than significant	Not applicable[1]
3.16-4. Construction activities would increase wear and tear on local roadways.		

Table 28. Summary of Potential Transportation Impacts for the No-Project and Proposed Project Alternatives		
NO-PROJECT ALTERNATIVE	**PROPOSED PROJECT**	**PROPOSED PROJECT WITH MITIGATION**
No impact	Significant	Less than significant
3.16-5. Construction activities could pose a safety hazard to motorists, bicyclists, pedestrians, and equestrians.		
No impact	Significant	Less than significant
3.16-6. Construction activities could affect the form or function of bridges under the jurisdiction of Caltrans, Trinity County, or private parties.		
No impact	Less than significant	Not applicable[1]

[1] Because this potential impact is less than significant, no mitigation is required.

Impact 3.16-1: Construction activities would reduce/close existing traffic lanes.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, there would be no construction-related reduction or closure of traffic lanes. Therefore, there would be no impact.

PROPOSED PROJECT

Construction activities associated with the Proposed Project would be managed to ensure that SR-299, SR-3, Riverview Drive, and Steiner Flat Road, the primary roads serving as access for the sites, would remain open to through-traffic. Temporary traffic control may be necessary during the mobilization and demobilization of heavy equipment; however, no road closures are planned. Passage for emergency vehicles would not be restricted. The adequate passage of traffic within and through the construction areas in the event of an emergency evacuation is discussed in Section 3.13, Hazards and Hazardous Materials. Because any traffic control requirements associated with site access roads would be temporary, this impact would be less than significant.

Impact 3.16-2: Construction activities would generate short-term increases in vehicle trips.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, short-term increases in vehicle trips would not occur because there would be no construction activities. Therefore, there would be no impact.

PROPOSED PROJECT

Construction activities associated with the Proposed Project would require truck and worker vehicle trips on SR-299, SR-3, Riverview Drive, and Steiner Flat Road leading to and from the rehabilitation sites; thus, vehicle trips would increase on these roads. Construction equipment (e.g., large trucks, excavators, and back-hoes) would be mobilized to the sites prior to rehabilitation activities and would be removed upon completion of these activities. During the construction period, when the greatest number of workers and trucks would be required, 20 to 30 construction workers and their vehicles would need access to the sites daily. These vehicle trips would be added to area roads on a recurring basis for the duration of rehabilitation activities at the sites. At the Douglas City site, impacts could occur during two different time periods because the Project would not be entirely completed in 2013.

Throughout construction, Reclamation would limit the amount of daily construction equipment traffic by staging the construction equipment and vehicles in the site boundary for the duration of work at each site. Post-construction activities (i.e., revegetation, maintenance, and monitoring)

would require intermittent access for 3 to 5 years. Existing traffic volumes along SR-299, SR-3, Riverview Drive, and Steiner Flat Road are low to moderate, and the potential increase in traffic generated from construction would be localized and minimal.

MITIGATION MEASURES

Construction activities would generate short-term increases in vehicle trips. Therefore, mitigation measure 4.16-2a described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of the specified mitigation measure would reduce the impacts to less than significant.

Impact 3.16-3: Implementation of the Proposed Project would obstruct access to adjacent land uses.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, access to adjacent land uses would not be affected because no construction activities would occur. Therefore, there would be no impact.

PROPOSED PROJECT

As described in Section 3.1, land uses in and adjacent to the sites consist mainly of public and private forestry and other resource lands and private residential areas. Land uses in the Douglas City Community Plan area that are near the Douglas City and Lorenz Gulch sites include residential, resource, commercial, mineral, and recreational uses. Construction activities associated with the Douglas City and Lorenz Gulch sites would use primary access points on SR-299, SR-3, Browns Mountain Road, Union Hill Road, Steel Bridge Road, Riverview Drive, Steiner Flat Road, and various private roads. Access to adjacent public and private lands could be restricted for short periods of time using traffic control measures. Short-term access to the Trinity River for recreational use could be restricted, to varying degrees, during construction activities. However, several public access points would be available around these stretches of the river during the Project implementation period, both upstream and downstream. In addition, in the long term vehicle access for launching boats at the Hidden Bar area within the Lorenz Gulch site would be officially authorized, thereby expanding recreation access and facilities. Impacts related to recreational access and other recreational resources are discussed under Section 3.8, Recreation. Short-term access limitations coupled with the construction criteria described in Appendix A (Traffic Control/Detour) would result in an impact that is less than significant for the Proposed Project sites.

Impact 3.16-4: Construction activities would increase wear and tear on local roadways.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, there would be no increased wear and tear on local roadways. Therefore, there would be no impact.

PROPOSED PROJECT

SR-299 is a designated truck route that was built to withstand occasional use by heavy equipment. Other local roads over which Project-related trucks and heavy equipment must pass may not be constructed or maintained to support substantial volumes of truck traffic. Numerous local roadways would provide access for construction-related activities, including roads under the jurisdiction of federal, state, and local agencies. Use of these roads by Project-related trucks and

heavy equipment would increase wear and tear on the local roadways and could result in adverse impacts on road conditions. The degree of impact would depend on roadway design and existing condition prior to the onset of TRRP activities. Because SR-299 was designed to accommodate a mix of vehicle types, including heavy trucks, the Project is not expected to add significantly to roadway wear-and-tear on this highway.

While construction equipment would generally be staged on-site during construction, additional truck travel on local roads would be required. Project planning to use on-site coarse sediment would minimize heavy equipment use on local roads needed for access to the sites. Additionally, trucks carrying heavy equipment would operate within the legal weight limits as determined by the state. The number and types of activities could require some level of road reconstruction at select sites before or after Project implementation. The level of construction traffic could also require additional maintenance for some road segments in conjunction with various activities. Although standard construction and transportation practices would be implemented to reduce the potential for adverse impacts on roadway conditions, the potential wear and tear on some roads under the Proposed Project would be a significant impact.

MITIGATION MEASURES

Construction activities would increase wear and tear on local roadways. Therefore, mitigation measure 4.16-4a described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of the specified mitigation measure would reduce the impacts to less than significant.

Impact 3.16-5: Construction activities could pose a safety hazard to motorists, bicyclists, pedestrians, and equestrians.

NO-PROJECT ALTERNATIVE

The No-Project alternative would not pose a safety hazard to motorists, bicyclists, pedestrians, and equestrians because there would be no construction activities. Therefore, there would be no impact.

PROPOSED PROJECT

Traffic safety hazards could arise for motorists, bicyclists, pedestrians, and equestrians in the vicinity of the construction access routes for the proposed sites as a result of the movement of Project-related trucks and heavy construction equipment. Impacts at the Douglas City site could occur both during 2013 and when the Project is completed. Truck and equipment access to the Trinity River during construction activities would be limited to designated routes to minimize public exposure to construction traffic. Trucks entering and exiting access roads off SR-299, Riverview Drive, and Steiner Flat Road may pose a particular hazard to motorists, cyclists, and equestrians using the roadway. The safety hazard would be limited to brief and intermittent time periods; nevertheless, it would be significant.

MITIGATION MEASURES

Construction activities could pose a safety hazard to motorists, bicyclists, pedestrians, and equestrians. Therefore, mitigation measure 4.16-5a described in Appendix A will be implemented to reduce the potential for impacts associated with the Proposed Project. Implementation of the specified mitigation measure would reduce the impacts to less than significant.

Impact 3.16-6: Construction activities could affect the form or function of bridges under the jurisdiction of Caltrans, Trinity County, or private parties.

NO-PROJECT ALTERNATIVE

The No-Project alternative would not affect bridges under the jurisdiction of Caltrans, Trinity County, or private parties because there would be no construction activities. Therefore, there would be no impact.

PROPOSED PROJECT

A number of bridges over the Trinity River and/or its tributaries could be used to access the sites, depending on where the equipment is coming from. The hydraulic model (HEC-RAS) described in the Trinity River Master EIR, Section 4.4, Water Resources, has been used to integrate the hydraulic controls established by these constructed features. Modification of the form or function of these structures would not be affected by rehabilitation activities in close proximity to these sites. Therefore, this impact would be less than significant.

3.17 Tribal Trust

The United States has a trust responsibility to protect and maintain rights reserved by, or granted to, federally recognized Indian tribes and individual Indians by treaties, statutes, and executive orders. The Secretary of the Interior is the trustee for the United States on behalf of Indian tribes and individuals. The trust responsibility requires that all federal agencies, including Reclamation, take all actions reasonably necessary to protect and maintain Indian trust assets.

Indian trust assets are legal interests in property held in trust by the federal government for federally recognized Indian tribes or individual Indians. "Assets" are anything owned that has monetary value. "Legal interest" means that a property interest exists for which there is a legal remedy, such as compensation or injunction, if there is improper interference. Indian trust assets can be real property, physical assets, or intangible property rights, such as a lease or a right of use. While most Indian trust assets are located on-reservation, they can also be located off-reservation. Examples of Indian trust assets include, but are not necessarily limited to, land, natural resources, native plants and wildlife, cultural resources, minerals, hunting and fishing rights, water rights, and instream flow. Tribal trust resources are discussed in Section 7.17 of the Trinity River Master EIR.

3.17.1 Affected Environment/Environmental Setting

The need to restore and maintain the natural production of anadromous fish in the mainstem Trinity River is derived in part from the federal government's trust responsibility to protect the fishery resources of the region's Indian tribes. The Trinity River Basin Fish and Wildlife Restoration Act of 1984 (Public Law 98-541) expressly acknowledges tribal interests in the basin's fishery resources by declaring that the measure of successful restoration of the Trinity River fishery includes the "ability of dependent tribal…fisheries" to participate fully, through enhanced in-river "harvest opportunities, in the benefits of restoration." In addition, the 1992 CVPIA specifically recognizes the federal trust responsibility in regard to the Trinity River fishery. The Project could potentially affect anadromous fish, non-anadromous fish, water, wildlife, vegetation, and overall riverine health; these impacts in turn could affect the sociocultures and economics of tribes.

This section focuses principally on the interests of the HVT and YT because, of the Indian tribes of the Klamath/Trinity Region, their interests could be the most directly affected by the Project. It should be understood, however, that potential impacts are important to the Karuk and Klamath people as well, since they share a common regional heritage.

3.17.1.1 Regional Setting

In 1855, President Pierce established the Klamath River Reservation. The reservation was designated as a strip of territory commencing at the Pacific Ocean and extending 1 mile in width on each side of the Klamath River for a distance of approximately 20 miles. Although the federal government's intent was to eventually move all the region's Indians onto the Klamath River Reservation, only some Yurok and Tolowa were moved. In 1864, the USDI issued a proclamation and instructions that established the Hoopa Valley Reservation on the Trinity River pursuant to legislation enacted by Congress that same year. The reservation is 12 miles square and bisected by 15 miles of the river (it has often been called the Square or the 12-mile Square). In 1876, President Grant issued an Executive Order formally establishing the boundaries of the Hoopa Valley Reservation.

Efforts soon began to provide a single contiguous homeland for the region's Indian people by connecting the Klamath River Reservation to the Hoopa Valley Reservation. In 1891, President Harrison extended the Hoopa Valley Reservation from the mouth of the Trinity River to the ocean, thereby encompassing and including the Hoopa Valley Reservation, the original Klamath River Reservation, and the intervening connecting strip. In 1988, Congress, under the Hoopa-Yurok Settlement Act, separated the Hoopa Valley Reservation into the present Yurok Reservation (a combination of the original Klamath River Reservation and other lands) and Hoopa Valley Reservation.

3.17.1.2 Indian Federally Reserved Rights

The United States has a trust responsibility to protect tribal trust resources. In general, this tribal trust responsibility requires that the United States protect tribal fishing and water rights, which are held in trust for the benefit of the tribes (USDI 1995). This trust responsibility is one held by all federal agencies. For projects under the auspices of the TRRP, Reclamation is obligated to ensure that their actions do not interfere with tribes' senior water rights. Pursuant to its trust responsibility and consistent with its other legal obligations, Reclamation must also prevent activities under its control that would adversely affect tribal fishing rights, even when those activities take place off-reservation.

FISHING RIGHTS

Salmon, steelhead, sturgeon, and lamprey that spawn in the Trinity River pass through the Hoopa Valley and Yurok Reservations and are harvested in tribal fisheries. The fishing traditions of these tribes stem from practices that far pre-date the arrival of non-Indians. Accordingly, when the federal government established what are today the Hoopa Valley and Yurok Indian Reservations on the Trinity and Lower Klamath Rivers, it reserved for the benefit of the Indian tribes of those reservations a right to the fish resources in the rivers running through them. The federally reserved fishing rights of the YT and HVT entitle them to take fish for ceremonial, subsistence, and commercial purposes. The federal government, as trustee, has an affirmative obligation to manage federally reserved Indian rights for the benefit of federally recognized Indian tribes. Federally

reserved Indian fishing rights are vested property rights held in trust by the United States for the benefit of the Indians.

WATER RIGHTS

In addition to fish, the tribes have reserved rights to water. The concept of reserved rights in general, and Indian reserved water rights specifically, originated just after the start of the 20th century with *Winters v. United States,* 207 U.S. 564 (1908). The ruling in this case, commonly referred to as the Winters Doctrine, states that when the federal government established a reservation, it implicitly reserved a quantity of water necessary to fulfill the purpose of said reservation. The USDI Solicitor's office reaffirmed these rights with respect to Reclamation's activities, stating "Reclamation is obligated to ensure that project operations not interfere with the tribes' senior water rights.

RIGHTS TO WILDLIFE AND VEGETATION RESOURCES

While the focus of the legal history surrounding Indian rights to resources has concentrated on water and fisheries, other resources, such as wildlife and vegetation, are also extremely important to the tribes, and the tribes have assessed that these resources are no less reserved. In the case of the HVT and YT, the decline in the health of the region's rivers has limited the availability of grasses and other plants important to traditional basketry, art, and medicine. Thus, while anadromous fish are the focus of the TRRP, other trust assets, such as vegetation, are embodied in the federal government's trust responsibility and, accordingly, need to be considered in the decision-making process.

CULTURAL ENVIRONMENT

Native uses of natural resources and the cultural significance of those resources have developed over many centuries, during the time that native people have lived in the heavily forested drainages of the Klamath and Trinity rivers and adjacent streams in northwestern California. Hunting, fishing, and gathering were the foundation of their societies. Tribes in the area included the Chilula, Hoopa Valley, Nongatl, Tsnungwe, and Whilkut, which spoke Athabascan languages; the Chimariko, Karuk, and Shasta, which spoke Hokan languages; the Wintun, which spoke a Penutian language; and the Wiyot and Yurok, which spoke Algonkian languages.

Some of these tribes, such as the Chilula, no longer exist. Others, including the Chimariko and Wintu, have not been officially recognized by the United States as a distinct and sovereign people. Among the Indian peoples still present in the region, only the Hoopa Valley, Yurok, Karuk, and Klamath tribes have received this recognition.

Strong social, cultural, and economic ties have existed through history among the tribes of the Klamath/Trinity Basin, based in large part on a shared reliance on the region's rivers and associated resources, particularly salmon. This reliance extends well beyond subsistence and commerce to the cultural and social fabric of their societies, as evidenced by their traditional, ceremonial, and spiritual ways of life that focus and center on the rivers and the fish, wildlife, and vegetation they support. For Indians of the Klamath/Trinity Basin, the interaction and identification with the natural environment define their cultures, lifestyles, and religions; therefore, the degradation of the natural environment has had a profoundly devastating impact.

PROPOSED PROJECT SITES

Based on consultation between the tribes and Reclamation, the Proposed Project sites contain trust assets, including fish, vegetation, and wildlife. Corresponding sections of this document provide

discussions of these resources. While no specific use of these sites by the tribes has been identified, the Trinity River provides a valuable corridor that connects these resources to the HVT and YT.

3.17.2 Environmental Consequences/Impacts and Mitigation Measures

The purpose of this section is to evaluate the potential impacts of the alternatives on tribal trust assets and the subsequent effects those impacts may have on the Indian tribes of the Klamath/Trinity Basin.

3.17.2.1 Methodology

While the Project is aimed at improving the river's anadromous fisheries, an assessment of how implementation may actually affect the Indian trust assets of the HVT and YT must be performed, as directed in the USDI Departmental Manual (Part 512, Chapter 2), and Reclamation's Indian Trust Asset Policy. Toward this end, the Indian trust asset impact evaluation focuses on the potential effects of the rehabilitation activities described in Chapter 2 on the health of the Trinity River. Because the river's overall health is a primary factor in determining the availability of fish, the potential tribal trust impacts are not evaluated on an asset-by-asset basis.

3.17.2.2 Significance Criteria

Under CEQA, lead agencies are not explicitly required to consider projects' impacts on tribal trust assets as a distinct category of impacts. With its focus on the physical environment, CEQA requires agencies to focus on impacts to environmental resources, some of which, such as fish, wildlife, and water quality, would be indirectly related to tribal trust values. Therefore, the significance criteria applied in this evaluation of potential consequences on tribal trust assets are general and based on the potential for components of the Proposed Project to result in any modification of, or change in, the quantity or quality of tribal trust assets.

Although CEQA does not expressly require the application of specific significance criteria for potential impacts to Indian trust assets, federal lead agencies evaluating proposed actions under NEPA typically include the evaluation of potential impacts to Indian trust assets as a distinct category of impacts. Accordingly, this evaluation assessed the impacts of the proposed activities described in this document relative to any modification or change in the value, use, quantity, quality, or enjoyment of downstream Indian trust assets.

3.17.2.3 Impacts and Mitigation Measures

Table 29 summarizes potential impacts on Indian trust assets that would result from implementation of the No-Project and Proposed Project alternatives.

Table 29. Summary of Potential Tribal Trust Impacts for the No-Project and Proposed Project Alternatives

No-Project Alternative	Proposed Project	Proposed Project With Mitigation
Impact 3.17-1. Implementation of the project may reduce the quantity or quality of tribal trust assets.		
No impact	Less than significant	Not applicable[1]

[1] Because this potential impact is less than significant, no mitigation is required.

Impact 3.17-1: Implementation of the Proposed Project may reduce the quantity or quality of tribal trust assets.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, mechanical channel rehabilitation activities would not be implemented at the Proposed Project sites; therefore, no direct impact to tribal trust assets would occur as a result of the Project. However, implementation of other activities to improve the fishery and other resources of the mainstem Trinity River could still be undertaken. Thus, under the No-Project alternative, the overall benefits to tribal trust assets gained through implementation of the overall TRRP would likely be achieved but the benefits associated with river rehabilitation at the Proposed Project sites would not be realized.

PROPOSED PROJECT

Under the Proposed Project, the Trinity River would continue to support tribal trust assets. The short-term impacts described in sections pertaining to geology, fluvial geomorphology, and soils; water quality; fishery resources; and vegetation, wildlife, and wetlands would occur if the Project is implemented. These impacts are expected to be short-term and to be outweighed by the overall benefits to tribal trust assets gained through implementation of the overall TRRP and the Proposed Project. Therefore, this impact is less than significant.

3.18 Environmental Justice

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," dated February 11, 1994, requires federal agencies to identify and address adverse human health or environmental effects of their actions on minorities and low-income populations and communities as well as the equity of the distribution of the benefits and risks of their decisions. Environmental justice addresses the fair treatment of people of all races and incomes with respect to actions affecting the environment. Fair treatment implies that no group of people should bear a disproportionate share of negative impacts from an environmental action.

To comply with the environmental justice policy established by the Secretary of the Interior, all USDI agencies are to identify and evaluate any anticipated effects, direct or indirect, from a project, action, or decision on minority and low-income populations and communities, including the equity of the distribution of the benefits and risks. Accordingly, this section examines the anticipated impacts of the Proposed Project with respect to potentially affected minority and economically disadvantaged groups. Socioeconomic issues, including population and housing, are evaluated in this document in Section 3.9, Socioeconomics. This section does not function as part of the IS portion of this joint document, because CEQA does not require state or local agencies to address environmental justice concerns in an IS.

3.18.1 Affected Environment/Environmental Setting

The Trinity River is a valuable economic resource for Trinity County. Its popularity as a recreation destination, particularly for fishing, white-water recreation, gold panning, and as an access point to the Salmon-Trinity Alps, directly benefits communities such as Lewiston, Douglas City, and Junction City through increased business patronage. Businesses benefit during peak recreation-use periods (e.g., rafting, kayaking, and fishing). Other economic opportunities such as agriculture are

severely limited by the surrounding topography; thus, minimizing the attraction for a transitional labor pool.

The U.S. Census uses a set of income limits that vary by family size and composition to determine who is in poverty. If a family's total income is less than the income limit, then that family, and every individual in it, is considered to be in poverty. Poverty income level thresholds are nationwide standards set by the Census. The formula for the poverty rate is the number of persons below the poverty level divided by the number of persons for whom poverty status is determined. In 2009, 18.2 percent of the population in Trinity County was living in poverty compared to 14.2 percent for the state of California as a whole. The 2009 median household income for Trinity County was $33,546, compared to the median California income of $58,925 (U.S. Census Bureau 2011).

In 2010 the vast majority of the population in Trinity County (approximately 87 percent) consisted of white individuals (U.S. Census Bureau 2011). The largest minority population in the county is Hispanic. In 1990, the Hispanic population was 3.3 percent of the county's total population. By 2010, the percentage had increased to 7.0 percent of the total, compared to 37.6 percent in California as a whole. The American Indian population constitutes the next largest minority group. In 2010, American Indians constituted 4.8 percent of the total county population, compared to 1 percent for California as a whole (U.S. Census Bureau 2011). The percentage of black and Asian residents in the county is small (each less than 1 percent).

Census statistics available for zip code 96024 include Douglas City (U.S. Census Bureau 2008). This community is predominately white (90.4 percent) and, according to the 2000 Census, the proportion of people in this area living below the poverty level (18.0 percent) is higher than for the balance of the United States (12.4 percent).

3.18.2 Environmental Consequences/Impacts and Mitigation Measures

3.18.2.1 Methodology

The EPA compares three factors—minority representation, low-income representation, and environmental burden—for a community of concern and one or more reference areas—for example, an entire county—to analyze potential environmental justice impacts. A community of concern can be defined in a number of ways, including a municipality, a census block group, a user-defined radius around a source of pollution, or a boundary drawn along physical features such as streets, streams, or railroad tracks. The demographic data for the community of concern can then be analyzed to determine whether there would be a potential environmental justice concern in the area. As part of this analysis, poverty levels and minority population levels were examined for Trinity County as a whole and for the residential areas associated with Douglas City, although only a limited amount of information was available for that area.

3.18.2.2 Significance Criteria

Because environmental justice is not a CEQA issue, specific significance criteria were not applied in evaluating potential environmental justice consequences. Instead, any modification or change in environmental justice factors that would occur in response to the Proposed Project is evaluated in accordance with NEPA requirements.

3.18.2.3 Impacts and Mitigation Measures

Table 30 summarizes the potential environmental justice impacts that would result from implementation of the No-Project and Proposed Project alternatives.

Table 30. Summary of Potential Environmental Justice Impacts for the No-Project and Proposed Project Alternatives

No-Project Alternative	Proposed Project	Proposed Project with Mitigation
Impact 3.18-1. Implementation of the project could adversely affect a minority or low-income population and/or community.		
No impact	Less than significant	Not applicable[1]

[1] Because this potential impact is less than significant, no mitigation is required.

Impact 3.18-1: Implementation of the Proposed Project could adversely affect a minority or low-income population and/or community.

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, no impact to a minority or low-income population or community would occur because the Project would not be implemented. Therefore, there would be no impact.

PROPOSED PROJECT

Although minority and low-income residents live in the vicinity of the Project, the impacts would generally be experienced by residents in relationship to their proximity to the sites, regardless of their racial or income characteristics. There is no evidence to suggest that the Project would cause a disproportionately high adverse human health or environmental effect on minority and low-income populations compared to other area residents. The known health risks to residents that could be associated with the Project are evaluated in the Water Quality, Air Quality, Hazardous Materials, and Noise sections of this document. For the most part, these health risks are associated with construction aspects of the Project, in that residents and construction workers could be exposed to hazardous materials that may be associated with the Project. Possible health risks also include construction-related accidents. Reclamation would manage the Project to minimize these risks, as required by applicable federal and state safety regulations. Therefore, no disproportionate or specific health risks or other impacts to low-income groups would be associated with the Project.

Chapter 4

4 CUMULATIVE EFFECTS AND OTHER CEQA AND NEPA CONSIDERATIONS

This EA/IS tiers from the "statutory considerations" discussion in the Trinity River Master EIR (Chapters 5 and 8). These discussions cover certain topics required under CEQA, such as cumulative impacts, the significant environmental effects of the Proposed Project, the significant effects that cannot be avoided if the Proposed Project is implemented, and growth-inducing effects of the Project. Additional discussions are also required under NEPA, such as the significant irreversible and irretrievable commitments of resources and the relationship between local short-term uses of the environment and the maintenance of long-term productivity. These considerations are summarized below; see the Trinity River Master EIR for complete discussions of these topics.

4.1 Cumulative Impacts

The regulatory framework for the assessment of cumulative impacts under CEQA is discussed in Chapter 5, Section 5.2.1, of the Trinity River Master EIR, and the regulatory framework for NEPA is discussed in Chapter 8, Section 8.2.1. Under the CEQA Guidelines (Section 15355), the term "cumulative impacts" refers to two or more individual impacts that, when considered together, are considerable or that otherwise compound or increase other environmental effects. Cumulative environmental impacts arise from the incremental impacts of the Proposed Project when added to other closely related past, present, and reasonably foreseeable future projects.

The CEQ NEPA implementing regulations (40 CFR 1508.7) state that cumulative impacts result from the incremental impact of a proposed action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) undertakes the other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

4.1.1 Methodology and Analysis

The methodology for the cumulative impact analysis in this document is described in section 5.2.2 of the Trinity River Master EIR. As discussed in that section, the methodology involved the assessment of the potential cumulative effects of the Proposed Project when considered in combination with a list of related projects within a defined geographical area. This assessment of cumulative impacts is considered in the same cumulative context—i.e., using the same list of related projects and programs and within the Project boundaries.

The issue-specific analysis of cumulative impacts in Chapter 5 of the Trinity River Master EIR identifies the potential cumulative impacts related to the Remaining Phase 1 and Phase 2 sites for a variety of resource areas. No additional cumulative impacts have been identified that are specific only to the Proposed Project sites. The previous issue-specific analysis in Chapter 5 sufficiently addresses the cumulative impacts of the Proposed Project, and no substantial differences arise in consideration of the Proposed Project separately. Table 31 summarizes the cumulative impact findings.

Table 31. Summary of Cumulative Impacts Findings from the Trinity River Master EIR	
Land Use	Implementation of the Proposed Project, in combination with other related projects, would not have a cumulative impact in terms of planning policies, nor would river rehabilitation activities result in cumulative effects in terms of local or federal land use planning policies.
Geology, Fluvial Geomorphology, and Soils	No significant cumulative impacts associated with geologic hazards, geomorphic processes, or erosional processes are anticipated to occur as a result of implementation of the Proposed Project in combination with other related projects. Appropriate implementation of prescribed mitigation measures would reduce potential impacts to a less than significant level.
Water Resources	Implementation of the Proposed Project in combination with other river rehabilitation activities would not have cumulatively considerable impacts on beneficial uses of the river or result in changes in the quantities of water available for any of those uses.
Water Quality	No significant cumulative impacts to water quality are anticipated to occur as a result of implementation of the Proposed Project in combination with other related projects. Individually, these activities would result in short-term, temporary effects on water quality. Appropriate implementation of prescribed mitigation measures would reduce potential impacts to a less than significant level.
Fishery Resources	No significant, adverse, cumulative impacts to fisheries resources are anticipated to occur as a result of implementation of the Proposed Project. The effect of the Proposed Project, in conjunction with other projects and programs, is expected to be beneficial in terms of the rehabilitation of habitat and fisheries resources. Implementation of the Proposed Project as mitigated would benefit, rather than adversely affect, fishery resources of the Trinity River in the long term.
Vegetation, Wildlife, and Wetlands	No significant cumulative impacts to vegetation, wildlife, and wetlands are anticipated to occur as a result of implementation of the Proposed Project in combination with other related projects. The Project as mitigated would benefit, rather than adversely affect, vegetation, wildlife, and wetlands in the long term, as would most of the other related projects and programs. Implementation of the Proposed Project would contribute to long-term ecological benefits in terms of vegetation, wildlife, and wetlands.
Recreation	No significant cumulative impacts to recreational resources are anticipated to occur as a result of implementation of the Proposed Project in combination with other related projects. Benefits to recreational values may be achieved through implementation of the TRRP over time.
Socioeconomics, Population, and Housing	No significant cumulative impacts to socioeconomics, population, and housing are anticipated to occur as a result of implementation of the Proposed Project. The related projects and programs described in the cumulative effects analysis in the Trinity River Master EIR are intended to benefit the Trinity River fishery, with moderate projected economic and social benefits to the residents and communities along the Trinity River.
Cultural Resources	No significant cumulative impacts to cultural resources are anticipated to occur as a result of implementation of the Proposed Project. Appropriate implementation of prescribed mitigation measures (e.g., surveys of potential impact areas by a professional archaeologist prior to construction, protection of potentially significant cultural sites, and coordination with local tribes), in coordination with the SHPO, would adequately mitigate for potential impacts, including cumulative impacts.
Air Quality	No significant cumulative impacts to air quality are anticipated to occur as a result of implementation of the Proposed Project. The NCUAQMD requirements would be addressed by implementation of prescribed mitigation measures. The Proposed Project, in conjunction with the other projects and programs occurring within the Trinity River Basin, would contribute cumulatively to global climate change. Thus, the Proposed Project would contribute to an adverse cumulative contribution to global climate change. Implementation of mitigation measures would reduce the cumulative contribution to global climate change to a less than significant level.

Aesthetics	No significant cumulative impacts to aesthetics are anticipated to occur as a result of implementation of the Proposed Project. Implementation of the Proposed Project would benefit, rather than adversely affect, aesthetics in the long term, as would most of the other related projects described in the cumulative effects analysis in the Trinity River Master EIR.
Hazardous Materials	No significant cumulative impacts related to hazardous materials are anticipated as a result of implementing the Proposed Project in combination with other related projects.
Noise	No significant cumulative impacts related to noise are anticipated through implementation of the Proposed Project in combination with other projects. Reclamation would coordinate the implementation of other restoration projects to ensure that construction noise is minimized through project scheduling.
Public Services and Utilities/Energy	No significant cumulative impacts related to public services and utilities/energy are anticipated as a result of implementation of the Proposed Project in combination with other related projects. The rehabilitation activities are designed in ways that ensure that emergency services would not be disrupted; that public services (e.g., school bus routes) would not be adversely affected; and that waste material generated from Project activities would be transported appropriately to authorized locations.
Transportation/ Traffic Circulation	No significant cumulative impacts related to transportation/traffic circulation are anticipated through the implementation of the Proposed Project in combination with other related projects. Traffic increases would be localized and temporary.
Tribal Trust Assets	No significant cumulative impacts to tribal trust assets are anticipated to occur as a result of implementation of the Proposed Project. The related projects and programs described in Chapter 5 of the Trinity River Master EIR, in combination with the Proposed Project, are expected to cumulatively result in beneficial effects to the tribal trust assets, including the overall health of the Trinity River and its fishery resources.
Environmental Justice	No disproportionate environmental effects on minority or low-income populations have been identified for either the Remaining Phase 1 or Phase 2 sites, and no significant cumulative impacts to environmental justice are anticipated to occur as a result of the implementation of the Proposed Project. Implementation of the Proposed Project, in conjunction with the other related projects and programs described in Chapter 5 of the Trinity River Master EIR, is anticipated to provide a net benefit to the local communities by helping to restore the Trinity River's fishery resources.

4.2 Irreversible and Irretrievable Commitments of Resources

NEPA (Section 102) and the CEQ NEPA implementing regulations (40 CFR 1502.16), require a discussion of "any irreversible and irretrievable commitments of resources which would be involved in a Proposed Action should it be implemented."

Section 15126.2(c) of the CEQA Guidelines also requires a discussion of the significant irreversible environmental changes that would result from the Proposed Project should it be implemented. This section of the CEQA Guidelines states:

> Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvements which provide access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

The No-Project alternative would not directly involve the use of resources or cause significant irreversible environmental effects other than those previously described in the Trinity River FEIS/EIR (USFWS et al. 2000a) and incorporated by reference in other sections of this document.

Implementation of the Proposed Project would not involve the substantial use of nonrenewable resources in such a way that would result in conditions that would be irreversible through removal or nonuse thereafter. Future generations would not be committed to irreversible consequences or uses; the effect on future generations would be beneficial as a result of the enhanced and maintained river system and related fishery resources. No irreversible damage from environmental accidents would be foreseeable in association with the Proposed Project.

Implementation of the Proposed Project would result in the use of fossil fuels, a nonrenewable form of energy. A relatively minor amount of nonrenewable resources would be used in the mechanical rehabilitation of the river channel, transport of gravel, and related construction and management activities at the rehabilitation sites. The material requirements for this Project would be relatively minor compared to the overall demand for such materials, and the use of these materials would not have a significant adverse effect on their continued availability.

4.3 Relationship between Local Short-Term Uses of the Environment and the Maintenance and Enhancement of Long-Term Productivity

Section 102 of the CEQ NEPA Regulations and CFR 1501.16 require that an environmental document include a discussion of "the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity." This discussion was included in Section 8.4 of the Trinity River Master EIR.

The Proposed Project does not involve a trade-off between a "local short-term use" of the environment and the maintenance and enhancement of the environment in the sense contemplated by NEPA. Implementation of the Proposed Project is intentionally aimed at maintaining and enhancing the long-term biological and environmental productivity of the river system. Implementation of the Proposed Project would not sacrifice the long-term productivity of the sites for short-term uses during construction.

The short-term impacts on the environment associated with implementation of the Proposed Project are considered minimal compared to the long-term benefits and productivity that would result from the Proposed Project in conjunction with other objectives of the TRRP. Construction-related impacts and land use conflicts would be short-term, occurring only during the construction phase of the Project. While such impacts are considered significant (in a CEQA sense), they would be mitigated to less than significant levels.

4.4 Growth-Inducing Impacts

Section 5.3 of the Trinity River Master EIR evaluated the potential for growth that could be induced by implementation of the Proposed Project and assessed the level of significance of any expected growth inducement. Under CEQA, growth itself is not assumed to be particularly beneficial, detrimental, or insignificant to the environment. If a project is determined to be growth inducing, an evaluation is made to determine whether significant impacts on the physical environment would result from that growth.

Implementation of channel rehabilitation activities and sediment management activities at the Proposed Project sites would not remove any constraints to development, create new or improved infrastructure, or otherwise create conditions that would induce growth. The Proposed Project would improve habitat for anadromous fish and, thus, improve conditions for fishing and recreation; however, the improved fishery resources resulting from implementation of the Proposed Project are not likely to directly or indirectly result in substantial development or population growth. Therefore, implementation of the Proposed Project would not result in a significant growth-inducing impact.

4.5 Environmental Commitments and Mitigation Measures

Reclamation's NEPA implementation guidance recommends that a list of environmental commitments for the preferred alternative be included in an EA. The list should contain all mitigation measures and management actions that are incorporated in the project as part of the proposal. Because this document is a joint NEPA/CEQA document, mitigation measures have been identified for potentially significant impacts in compliance with CEQA requirements. Under CEQA, lead agencies are required to adopt a program for monitoring or reporting on the revisions that they required be made part of the project and other measures required to mitigate or avoid significant environmental effects. The MMRP for implementation of the Proposed Project complies with Reclamation's practice to include a list of environmental commitments in an EA/IS. The MMRP is included as Appendix E of the Trinity River Master EIR. A site specific MMRP for the Proposed Project is included as Appendix A of this document.

4.6 Significant Effects

CEQA establishes a duty for public agencies to avoid or minimize environmental damage where feasible (CEQA Guidelines Section 15021), and determinations of significance play a critical role in the CEQA process (CEQA Guidelines 15064). Section 5.4 of the Trinity River Master EIR addresses several types of potentially significant effects.

Potentially significant effects have been identified in the areas of geology, geomorphology, soils, and minerals; water quality; fishery resources; vegetation, wildlife, and wetlands; recreation; cultural resources; air quality; aesthetics; noise; public services and utilities; and traffic and transportation. These potential effects are discussed in each resource. As part of the environmental impact assessment for each resource area, mitigation measures have been identified that reduce these impacts to less than significant levels. The environmental analysis conducted for the Proposed Project did not identify any effects that, after mitigation, remained significant and therefore unavoidable; no significant irreversible effects were identified associated with the Proposed Project.

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APPENDIX A – MITIGATION MONITORING AND REPORTING PROGRAM AND PROJECT DESIGN ELEMENTS

Trinity River Channel Rehabilitation Sites: Douglas City (River Mile 93.6-94.6) and Lorenz Gulch (River Mile 89.4-90.2)

March 2013

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Mitigation Monitoring and Reporting Program

Introduction

The first part of this document comprises the Mitigation Monitoring and Reporting Program (MMRP) for the Trinity River Channel Rehabilitation Sites: Douglas City (River Mile 93.6-94.6) and Lorenz Gulch (River Mile 89.4-90.2) Project (the Proposed Project). The purpose of providing the MMRP as an appendix is to facilitate its use as a stand-alone document, which clearly expresses to the reader the mitigation responsibilities of the Bureau of Reclamation (Reclamation), and Regional Water Quality Control Board – North Coast Region (Regional Water Board) in implementing the project. The mitigation measures listed herein, which are an updated version of those included within the Trinity River Master EIR (NCRWQCB and Reclamation 2009), are required by law or regulation and will be adopted by the Regional Water Board when it issues it Notice of Applicability for the project. The second part of this document is comprised of project design elements that shall be implemented as part of the Proposed Project. In general, Chapter 3 mitigation measures in this EA/IS correspond to Chapter 4 mitigation measures in the Master EIR. Consequently, Master EIR numeric mitigation measure coding corresponds to mitigation measures that are numerically one integer less than in this document. For example, Master EIR mitigation measure 4.5-1a corresponds to this document's 3.5-1a. While numerically different, the Appendix A mitigation measures in this EA/IS, are meant to mitigate the same impacts as those identified in the Master EIR. Consequently, these mitigation measures are only different to the extent necessary to tailor the mitigation measures to the site specific conditions.

Mitigation is defined by the California Environmental Quality Act (CEQA) – Section 15370 as a measure which:

- Avoids the impact altogether by not taking a certain action or parts of an action
- Minimizes impacts by limiting the degree or magnitude of the action and its implementation
- Rectifies the impact by repairing, rehabilitating, or restoring the impacted environment
- Reduces or eliminates the impact over time by preservation and maintenance operations during the life of the project
- Compensates for the impacts by replacing or providing substitute resources or environments

The mitigation program identified in the MMRP to reduce potential project impacts consists of mitigation measures, project design elements, and construction criteria and methods. Mitigation measures provided in this MMRP have been identified in Chapter 3, Affected Environment and Environmental Consequences of the Proposed Project EA/IS, as feasible and effective in mitigating project-related environmental impacts. This MMRP includes discussion of the following: legal requirements, intent of the MMRP, development and approval process for the MMRP, the authorities and responsibilities associated with the implementation of the MMRP, a description of the mitigation summary table, project design elements, construction

criteria and methods, and resolution of noncompliance complaints.

Legal Requirements

The legal basis for the development and implementation of the MMRP lies within CEQA (including the California PRC). Sections 21002 and 21002.1 of the California PRC state:

- Public agencies are not to approve projects as proposed if there are feasible alternatives or feasible mitigation measures available that would substantially lessen the significant environmental effects of such projects; and
- Each public agency shall mitigate or avoid the significant effects on the environment of projects that it carries out or approves whenever it is feasible to do so.
- Section 21081.6 of the California PRC further requires that: the public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation.
- The monitoring program must be adopted when a public agency makes its findings under CEQA so that the program can be made a condition of project approval in order to mitigate significant effects on the environment. The program must be designed to ensure compliance with mitigation measures during project implementation to mitigate or avoid significant environmental effects.

Intent of the Mitigation Monitoring and Reporting Program

The MMRP is intended to satisfy the requirements of CEQA as they relate to the project. It is anticipated to be used by Reclamation and Regional Water Board staff, participating agencies, project contractors, and mitigation monitoring personnel during implementation of the project.

The primary objective of the MMRP is to ensure the effective implementation and enforcement of adopted mitigation measures and permit conditions. The MMRP will provide for monitoring of construction activities as needed, on-site identification and resolution of environmental problems, and proper reporting to lead agency staff.

Development and Approval Process

The timing elements for implementing mitigation measures and the definition of the approval process have been provided in detail through this MMRP to assist staff from Reclamation and the Regional Water Board by providing the most usable monitoring document possible.

Authorities and Responsibilities

As the project proponent, Reclamation, functioning as the TRRP, will have the primary responsibility for the execution and proper implementation of the MRRP. The Regional Water Board may provide Reclamation with support, as warranted. Reclamation will be responsible for the following activities:

- Coordination of monitoring activities
- Management of the preparation and filing of monitoring compliance reports
- Maintenance of records concerning the status of all approved mitigation measures

Summary of Monitoring Requirements

Table A-1, which follows, summarizes the mitigation measures and associated monitoring requirements for the Proposed Project. The mitigation measures are organized by environmental issue area (i.e., Soils, Water Quality, etc.). Table A-1 is composed of the following four columns:

- **Mitigation Measure:** Lists the mitigation measures identified for each significant impact discussed in the Draft EA/IS for the project. The mitigation numbering system used in the Draft MEIR/Draft EIR is carried forward in this MMRP.
- **Timing/Implementation:** Indicates at what point in time or project phase the mitigation measure will need to be implemented.
- **Responsible Parties (tasks):** Documents which agency or entity is responsible for implementing a mitigation measures and what, if any, coordination is required (e.g., approval from Caltrans). If more than one party has responsibility under a given mitigation measure, the tasks of each individual party is identified parenthetically (e.g., "implementation" or "monitoring").
- **Verification:** Provides spaces to be initialed and dated by the individual responsible for verifying compliance with each specific mitigation measure.

Resolution of Noncompliance Complaints

Any person or agency may file a complaint that states noncompliance with the mitigation measures that were adopted as part of the approval process for the project. The complaint shall be directed to Reclamation at the TRRP office (P.O. Box 1300, 1313 South Main Street, Weaverville, CA 96093) and to the Regional Water Board at 5550 Skylane Boulevard, Suite A, Santa Rosa, California, 95403, in written form, providing detailed information on the purported violation. Reclamation and the Regional Water Board shall conduct an investigation and determine the validity of the complaint. If noncompliance with a mitigation measure is verified, Reclamation shall take the necessary action(s) to remedy the violation. The complainant shall receive written confirmation indicating the results of the investigation or the final corrective action that was implemented in response to the specific noncompliance issue.

Table A-1. Summary of Mitigation Monitoring Requirements

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
3.3 Geology, Fluvial Geomorphology, and Soils			
Impact 3.3-2: Construction activities associated with the Proposed Project could result in increased erosion and short-term sedimentation of the Trinity River.			
4.3-2a Reclamation will implement the following measures during construction activities: • Areas where ground disturbance will occur will be identified in advance of construction and limited to only those areas that have been approved by Reclamation. • All vehicular construction traffic will be confined to the designated access routes and staging areas. • Disturbance will be limited to the minimum necessary to complete all rehabilitation activities. • All supervisory construction personnel will be informed of environmental concerns, permit conditions, and final project specifications.		Reclamation (implementation) Regional Water Board (SWPPP review and approval) BLM (SWPPP review)	
4.3-2b Reclamation will prepare an erosion and sedimentation control plan (Storm Water Pollution Prevention Plan [SWPPP]). Measures for erosion control will be prioritized based on proximity to the river. Reclamation will provide the SWPPP for review by associated agencies (e.g., BLM, the Regional Water Board, NMFS, and CDFW) upon request. Reclamation's project manager will ensure the preparation and implementation of an erosion and sediment control plan prior to the start of construction. The following measures will be used as a guide to develop this plan: • Restore disturbed areas to pre-construction contours to the fullest extent feasible. • Salvage, store, and use the highest quality soil for revegetation. • Discourage noxious weed competition and control noxious weeds. • Clear or remove roots from steep slopes immediately prior to scheduled construction. • Leave drainage gaps in topsoil and spoil piles to accommodate surface water runoff. • To the fullest extent possible, cease excavation activities during significantly wet or windy weather. • Use bales, wattles, and/or silt fencing as appropriate. • Before seeding disturbed soils, work the topsoil to reduce compaction caused by construction vehicle traffic. • Rip feathered edges (and floodplain surfaces where appropriate) to approximately 18 inches deep. The furrowing of the river's edge will remove plant roots to allow mobilization of the bed, but will also intercept sediment before it reaches the waterway. • Spoil sites will be located such that they do not drain directly into a surface water feature, if possible. If a spoil site will drain into a surface water feature, catch basins will be constructed to intercept sediment before it reaches the feature. Spoil sites will be graded and vegetated to reduce the potential for erosion. • Sediment control measures will be in place prior to the onset of the rainy season to ensure that surface water runoff does not occur. Project areas will be monitored and maintained in good			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
working condition until disturbed areas have been seeded and mulched or revegetated in another fashion. If work activities take place during the rainy season, erosion control structures will be in place and operational at the end of each construction day.			
Impact 3.3-3: Implementation of the Proposed Project would interfere with existing, proposed, or potential development of mineral resources.			
4.3-3a Reclamation will implement the following measures during construction: • Areas where ground disturbance will occur will be identified in advance of construction and limited to only those areas that have been approved by Reclamation. • All vehicular construction traffic will be confined to the designated access routes and staging areas. • Disturbance will be limited to the minimum necessary to complete all rehabilitation activities. • All supervisory construction personnel will be informed of environmental concerns, permit conditions, and final project specifications.		Reclamation (implementation)	
4.3-3b Reclamation will prepare a SWPPP as stipulated in Mitigation Measure 4.2-2b.			
4.3-3c Reclamation will coordinate with private landowners and owners of active mining claims to discuss future mining plans and develop site-specific measures that can be implemented to avoid or lessen project-related impacts to mineral resources associated with the Trinity River and its tributaries.			
4.5 Water Quality			
Impact 3.5-1: Construction of the proposed project could result in short-term, temporary increases in turbidity and total suspended solids levels during construction.			
4.5-1a The water quality objective for turbidity levels in the Trinity River, as listed in the Basin Plan for the North Coast Region (North Coast Regional Water Quality Control Board 2011), is summarized below. • Turbidity levels will not be increased more than 20 percent above naturally occurring background levels. Allowable zones of dilution within which higher percentages can be tolerated may be defined for specific discharges upon the issuance of discharge permits or waiver thereof. • Due to the nature of the proposed restoration activities and the clarity of the Trinity River during low flow conditions, the Regional Water Board has determined that an allowable zone of turbidity dilution is appropriate and necessary in order for Trinity River restoration activities to be accomplished in a meaningful, timely, and cost-effective manner that fully protects beneficial uses without resulting in a violation of the water quality objective for turbidity. • Project activities that occur in areas outside of the active river channel will not increase turbidity levels by more than 20 percent above naturally occurring background levels. During in-river construction activities and until the first extended period of post-construction high flow (i.e., flows of at least 6,000 cfs inundate the project areas and floodplain for a minimum of 7 days) a zone of turbidity dilution within which higher percentages will be tolerated will be defined in discharge permits as the full width of the river channel within 500 linear feet downstream of any project activity that increases naturally occurring background levels, provided that all other required controls and appropriate BMPs for sediment and turbidity control are in place and downstream			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
beneficial uses are also fully protected. When naturally occurring background levels are less than or equal to 20 NTUs, turbidity levels immediately downstream of the zone of turbidity dilution shall not exceed 20 NTUs. If naturally occurring background levels are greater than 20 NTUs, turbidity levels immediately downstream of the 500 linear foot zone of dilution shall not be increased by more than 20 percent above the naturally occurring background level.			
4.5-1b To ensure that turbidity levels do not exceed the thresholds described above (4.4-1a) during in-river project construction activities, Reclamation shall monitor turbidity levels upstream within 50 feet of project activities (i.e., natural background) and 500 feet downstream of the in-river construction activities that could increase turbidity. At a minimum, field turbidity measurements shall be collected whenever a visible increase in turbidity is observed. Monitoring frequency shall be a minimum of every two hours during in-river work periods and when activities commence that are likely to increase turbidity levels above any previously monitored levels. If grab sample results indicate that turbidity levels exceed 20 NTU at 500 feet downstream from construction activities, remedial actions will be implemented to reduce and maintain turbidity at or below 20 NTU immediately downstream of the 500 linear foot zone of dilution. Potential remedial actions include halting or slowing construction activities and implementation of additional BMPs until turbidity levels are at or below 20 NTU.			
4.5-1c Fill gravels used on the streambeds, stream banks, and river crossings will be composed of washed, spawning-sized gravels from a local Trinity River Basin source. Gravel will be washed to remove any silts, sand, clay, and organic matter and will be free of contaminants such as petroleum products. Washed gravel will pass Caltrans cleanliness test #227 with a value of 85 or greater.			
4.5-1d Reclamation will prepare and implement a SWPPP that describes BMPs for the project, including silt fences, sediment filters, and routine monitoring to verify effectiveness. Proper implementation of erosion and sediment controls will be adequate to minimize sediment inputs into the Trinity River until vegetation regrowth occurs. All required controls and BMPs, including sediment and erosion control devices, will be inspected daily during the construction period to ensure that the devices are properly functioning. Excavated and stored materials will be kept in upland activity areas with erosion control properly installed and maintained. Excavated and stored materials will be staged in stable upland activity areas. All applicable erosion control standards will be required during stockpiling of materials.			
4.5-1e To minimize the potential for increases in turbidity and suspended sediments entering the Trinity River as a result of access routes (e.g., roads), Reclamation will implement the following protocols: • Keep bare soil to the minimum required by designs. Erosion control devices/measures will be applied to areas where vegetation has been removed as needed to reduce short-term erosion prior to the start of the rainy season. • Keep runoff from bare soil areas well dispersed. Dispersing runoff keeps sediment on-site and prevents sediment delivery to streams. Direct any concentrated runoff from bare soil areas into natural buffers of vegetation or areas with more gentle slopes where sediment can settle out. • Disconnect and disperse flow paths, including roadside ditches, that might otherwise deliver fine			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
sediment to stream channels or other water bodies. • Decompact or rip floodplain areas so that surfaces are permeable and no surface water runoff occurs.			
Impact 3.5-2: Construction of the proposed project could result in short-term, temporary increases in turbidity and total suspended solids levels following construction.			
4.5-2a Turbidity increases associated with project activities will not exceed the water quality objectives for turbidity in the Trinity River Basin (North Coast Regional Water Quality Control Board 2011).			
4.5-2b To ensure that turbidity levels do not exceed the threshold following construction, Reclamation will monitor turbidity and total suspended solids during and after representative rainfall events to determine the effect of the project on Trinity River water quality. At a minimum, field turbidity measurements will be collected whenever a visible increase in turbidity is observed. • If increases in turbidity and total suspended solids are observed as a result of erosion from constructed features, field turbidity measurements will be collected 50 feet upstream of a point adjacent to the end of the feature and 500 feet downstream of the feature. • If the grab sample indicates that turbidity levels exceed the established thresholds identified in the Basin Plan, the Regional Water Board will be notified. The need to implement erosion control measures for turbidity that is expected to result from overland river flows (versus surface run-off) will be evaluated with Regional Water Board staff to determine if remediation measures are needed.			
4.5-2c To reduce the potential for the access routes to continually contribute soil materials to the Trinity River following project construction, thereby increasing turbidity and total suspended solids in the river, these routes will be stabilized or decommissioned upon completion of work in those areas consistent with the requirements outlined in at the end of this appendix (Design Elements and Construction Criteria). Decommissioning is defined as removing those elements of a road that reroute hillslope drainage and present slope stability hazards.			
Impact 3.5-3: Construction of the proposed project could cause contamination of the Trinity River from hazardous materials spills.			
4.5-3a Reclamation will prepare and implement a spill prevention and containment plan in accordance with applicable federal and state requirements.			
4.5-3b Reclamation will ensure that any construction equipment that will come in contact with the Trinity River be inspected daily for leaks prior to entering the flowing channel. External oil, grease, and mud will be removed from equipment using steam cleaning. Untreated wash and rinse water will be adequately treated prior to discharge if that is the desired disposal option.			
4.5-3c Reclamation will ensure that hazardous materials, including fuels, oils, and solvents, not be stored or transferred within 150 feet of the active Trinity River channel. Areas for fuel storage, refueling, and servicing will be located at least 150 feet from the active river channel or within an adequate secondary fueling containment area. Gas pumps and engines will be stored and maintained on impermeable			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
barriers so that any leaking petroleum products are isolated from the ground. In addition, the construction contractor will be responsible for maintaining spill containment booms onsite at all times during construction operations and/or staging of equipment or fueling supplies. Fueling trucks will maintain a spill containment boom at all times.			
Impact 3.5-5: Construction and maintenance of the proposed project could result in the degradation of Trinity River beneficial uses identified in the Basin Plan.			
Water quality Mitigation Measures 4.5-1a, 4.5-1b, 4.5-1c, 4.5-1d, 4.5-1e, 4.5-2a, 4.5-2b, 4.5-2c, 4.5-3a, 4.5-3b, and 4.5-3c described above shall be implemented to protect the beneficial uses of the Trinity River.			
3.6 Fishery Resources			
Impact 3.6-1: Implementation of the proposed project could result in effects on potential spawning and rearing habitat for anadromous fishes, including the federally and state-listed coho salmon.			
4.6-1a The proposed construction schedule avoids in-channel work during the period in which it could affect spawning spring- and fall-run Chinook salmon, coho salmon, and steelhead or their embryos once in the gravel. As directed by the 2000 Biological Opinion (National Marine Fisheries Service 2000), Reclamation will ensure that all in-channel construction activities are conducted during late-summer, low-flow conditions (e.g., July 15-September 15).		Reclamation (implementation)	
4.6-1b Alluvial material used for coarse sediment additions will be composed of washed, spawning-sized gravels (3/8- to 5-inches diameter) from a local Trinity River Basin source. Gravel will be washed to remove any silts, sand, clay, and organic matter; will be free of contaminants, such as petroleum products; and will pass Caltrans cleanliness test #227 with a value of 85 or greater.			
Impact 3.6-2: Implementation of the proposed project could result in increased erosion and sedimentation levels that could adversely affect fishes, including the federally and state-listed coho salmon.			
4.6-2a The water quality objective for turbidity levels in the Trinity River, as listed in the Basin Plan for the North Coast Region (North Coast Regional Water Quality Control Board 2011), is summarized below. • Turbidity levels shall not be increased more than 20 percent above naturally occurring background levels. Allowable zones of dilution within which higher percentages can be tolerated may be defined for specific discharges upon the issuance of discharge permits or waiver thereof. • Due to the nature of the proposed restoration activities and the clarity of the Trinity River during low flow conditions, the Regional Water Board has determined that an allowable zone of turbidity dilution is appropriate and necessary in order for Trinity River restoration activities to be accomplished in a meaningful, timely, and cost-effective manner that fully protects beneficial uses without resulting in a violation of the water quality objective for turbidity. • Project activities that occur in areas outside of the active river channel will not increase turbidity levels by more than 20 percent above naturally occurring background levels. During in-river construction activities and until the first extended period of post-construction high flow (i.e., flows of at least 6,000 cfs inundate the project areas and floodplain for a minimum of 7 days) a zone of			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
turbidity dilution within which higher percentages will be tolerated will be defined in discharge permits as the full width of the river channel within 500 linear feet downstream of any project activity that increases naturally occurring background levels, provided that all other required controls and appropriate BMPs for sediment and turbidity control are in place and downstream beneficial uses are also fully protected. When naturally occurring background levels are less than or equal to 20 NTUs, turbidity levels immediately downstream of the zone of turbidity dilution shall not exceed 20 NTUs. If naturally occurring background levels are greater than 20 NTUs, turbidity levels immediately downstream of the 500 linear foot zone of dilution shall not be increased by more than 20 percent above the naturally occurring background level.			
4.6-2b To ensure that turbidity levels do not exceed the thresholds described above (4.6-2a) during in-river project construction activities, Reclamation shall monitor turbidity levels upstream within 50 feet of project activities (i.e., natural background) and 500 feet downstream of the in-river construction activities that could increase turbidity. At a minimum, field turbidity measurements shall be collected whenever a visible increase in turbidity is observed. Monitoring frequency shall be a minimum of every two hours during in-river work periods and when activities commence that are likely to increase turbidity levels above any previously monitored levels. If grab sample results indicate that turbidity levels exceed 20 NTU at 500 feet downstream from construction activities, remedial actions will be implemented to reduce and maintain turbidity at or below 20 NTU immediately downstream of the 500 linear foot zone of dilution. Potential remedial actions include halting or slowing construction activities and implementation of additional BMPs until turbidity levels are at or below 20 NTU.			
4.6-2c Fill gravels used on the streambeds, stream banks, and river crossings will be composed of washed, spawning-sized gravels from a local Trinity River Basin source. Gravel will be washed to remove any silts, sand, clay, and organic matter and will be free of contaminants such as petroleum products. Washed gravel will pass Caltrans cleanliness test #227 with a value of 85 or greater.			
4.6-2d Reclamation will prepare and implement a SWPPP that describes BMPs for the project, including silt fences, sediment filters, and routine monitoring to verify effectiveness. Proper implementation of erosion and sediment controls will be adequate to minimize sediment inputs into the Trinity River until vegetation regrowth occurs. All required controls and BMPs, including sediment and erosion control devices, will be inspected daily during the construction period to ensure that the devices are properly functioning. Excavated and stored materials will be kept in upland activity areas with erosion control properly installed and maintained. Excavated and stored materials will be staged in stable upland activity areas. All applicable erosion control standards will be required during stockpiling of materials.			
4.6-2e To minimize the potential for increases in turbidity and suspended sediments entering the Trinity River as a result of access routes (e.g., roads), Reclamation will implement the following protocols: • Keep bare soil to the minimum required by designs. Erosion control devices/measures will be applied to areas where vegetation has been removed to reduce short-term erosion prior to the start of the rainy season.			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
• Keep runoff from bare soil areas well dispersed. Dispersing runoff keeps sediment on-site and prevents sediment delivery to streams. Direct any concentrated runoff from bare soil areas into natural buffers of vegetation or areas with more gentle slopes where sediment can settle out. • Disconnect and disperse flow paths, including roadside ditches, that might otherwise deliver fine sediment to stream channels. • Decompact or rip floodplain areas so that surfaces are permeable and no surface water runoff occurs.			
Impact 3.6-3: Construction activities associated with the Proposed Project could result in the accidental spill of hazardous materials that could adversely affect fishes, including the federally and state-listed coho salmon.			
4.6-3a Construction specifications will include the following measures to reduce potential impacts associated with accidental spills of pollutants (fuel, oil, grease, etc.) on vegetation and aquatic habitat resources within the project boundary: • Equipment and materials will be stored away from wetland and surface water features. • Vehicles and equipment used during construction will receive proper and timely maintenance to reduce the potential for mechanical breakdowns leading to a spill of materials. Maintenance and fueling will be conducted in an area at least 150 feet away from waters of the Trinity River or within an appropriate secondary fueling containment area. Gasoline engines and pumps operated on the floodplain will be isolated from the ground by an impermeable barrier. • The contractor will develop and implement site-specific BMPs, a water pollution control plan, and emergency spill control plan. The contractor will be responsible for immediate containment and removal of any toxins released.		Reclamation (implementation)	
Impact 3.6-4: Construction activities associated with the Proposed Project could result in the mortality of rearing fishes, including the federally and state-listed coho salmon.			
4.6-4a To avoid impacts to spawning and incubating salmonids, instream work will only occur between July 15 and September 15.			
4.6-4b To avoid or minimize potential injury and mortality of fish during riverine activities (e.g., addition and grading of coarse sediment), equipment will be operated slowly and deliberately to alert and scare adult and juvenile salmonids away from the work area.			
4.6-4c Reclamation will minimize potential injury and mortality of fish during the use of low-flow channel crossings. This will be accomplished by minimizing vehicle traffic and by operating equipment and vehicles slowly and deliberately to alert and scare adult and juvenile salmonids away from the crossing area, or by having a person wade ahead of equipment to scare fish away from the crossing area.			
4.6-4d To avoid or minimize potential injury and mortality of fish during excavation and placement of fill materials in the active low-flow channel, equipment will be operated slowly and deliberately to alert and scare adult and juvenile salmonids away from the work area. Reclamation will ensure that before submerging an excavator bucket or laying gravel below the water surface, the excavator bucket will be operated to "tap" the surface of the water, or a person will wade ahead of fill placement equipment to			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
scare fish away from the work area. To avoid impacts to mobile life stages of salmonids that may be present in the water column, the first layers of clean gravel that are being placed into the wetted channel will be added slowly and deliberately to allow fish to move from the work area.			
4.6-4f Monitoring of the constructed inundation surfaces for salmon fry stranding will be performed by a qualified fishery biologist immediately after recession of flood flow events designated as a 1.5- year or less frequent event (i.e., $Q \geq$6,000 cfs) for a period of 3 years following construction. These flows, and associated fry stranding surveys, will typically occur between January and May. If substantial stranding is observed, Reclamation will take appropriate measures to return stranded fishes to river habitats and to subsequently modify the constructed surfaces prior to the next managed flow release to reduce the likelihood of future occurrences of fry stranding.		Reclamation (implementation)	
Impact 3.6-5: Implementation of the Proposed Project would result in the permanent and temporary loss of SRA for anadromous salmonids.			
4.6-5a Prior to the start of construction activities, Reclamation will retain a qualified biologist to identify potential construction access routes necessary for the projects to ensure that these features avoid and/or minimize to the fullest extent impacts to riparian habitats and wetland waters. In addition, Reclamation will clearly identify, and flag in the field, biologically sensitive areas (e.g., jurisdictional waters and riparian habitat) to be protected, and will provide the contractor with specific instructions to avoid any construction activity within these features. Reclamation will inspect and maintain flagged areas on a regular basis throughout the construction phase.		Reclamation (implementation)	
4.6-5b Reclamation will continue to implement the Riparian Revegetation and Monitoring Plan during Proposed Project implementation. The plan acknowledges that the ultimate goals of the TRRP include enhancement and maintenance of functional riparian habitat and no net-loss of riparian habitat and jurisdictional wetlands within channel rehabilitation site boundaries and generally throughout the 40-mile reach of the Trinity River below the TRD.			
4.6-5c Reclamation will initiate a 10-year mitigation monitoring program after the first growing season following project implementation. After a period of 5 years, the need for additional riparian habitat and wetland enhancement will be evaluated in a written report. At that time, Reclamation, in consultation with the USACE, Regional Water Board, and CDFW, will determine whether there is a need to further enhance or create additional areas of riparian habitat or jurisdictional wetlands within the project boundary so that there will be no net loss of riparian habitat after a 10-year monitoring period. In addition, wetlands will be redelineated 5 years post-project implementation to ensure no net loss of wetland habitat. Riparian habitat reporting 5 years after project implementation and wetland delineation 5 years after implementation will provide Reclamation with needed data in a timely fashion to take additional pro-active measures towards meeting the goals of no net loss of riparian and jurisdictional wetland habitat within rehabilitation site boundaries after 10 years.		Reclamation (implementation)	
Impact 3.6-6: Implementation of the Proposed Project would result in fish passage being temporarily impaired during the in-stream construction phase.			
4.6-6a Low water crossings will only be constructed and used between July 15 and September 15. Fill gravels used on the low-water crossings, streambeds, and stream banks will be composed of washed,			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
spawning-sized gravels from a local Trinity Basin source. Gravel will be washed to remove any silts, sand, clay, and organic matter and will be free of contaminants such as petroleum products. Washed gravel will pass Caltrans cleanliness test #227 with a value of 85 or greater. Abutment and embankment materials used for bridges will be native alluvium obtained from within the boundaries of the Remaining Phase 1 or Phase 2 sites.			
4.6-6b Reclamation will construct the low-flow channel crossings to allow adequate depths and velocities for adult and juvenile salmonids to pass safely. Flows associated with storm events are not considered critical because the width and hydrologic conditions associated with low-flow channel crossings in the Trinity River are not considered to limit fish passage at elevated flows and would be comparable to hydrologic conditions in local riffle-and-run features. For Trinity River low-flow channel crossings at base flows, velocities will not exceed 2 feet per second to allow for juvenile fish passage and water depths will not be less than 12 inches in two-thirds of the river channel to provide adequate depth for adult salmon and steelhead passage.			
4.6-6c The number of vehicle and equipment crossings of the Trinity River will be minimized.			
4.6-6d Reclamation will not impede the physical features or hydraulic process of the Trinity River in a fashion that would be inconsistent with the 2000 Biological Opinion (National Marine Fisheries Service 2000), or result in a temporary impairment to fish passage related to a bridge.			
3.7 Vegetation, Wildlife, and Wetlands			
Impact 3.7-1: Construction activities associated with the Proposed Project could result in the loss of jurisdictional waters including wetlands.			
4.7-1a Prior to the start of construction activities, Reclamation will retain a qualified biologist to identify potential construction access routes to ensure that these features avoid and/or minimize to the fullest extent impacts to jurisdictional waters. In addition, Reclamation will clearly identify, and flag in the field, biologically sensitive areas (e.g., jurisdictional waters and riparian habitat) to be protected, and will provide the contractor with specific instructions to avoid any construction activity within these features. Reclamation will inspect and maintain marked areas on a regular basis throughout the construction phase.		Reclamation (implementation)	
4.7-1b Reclamation will continue to implement the Riparian Revegetation and Monitoring Plan during Proposed Project implementation. The plan acknowledges that the ultimate goals of the TRRP include enhancement and maintenance of functional riparian habitat and no net loss of riparian habitat and jurisdictional wetlands both within channel rehabilitation site boundaries and generally throughout the 40-mile reach of the Trinity River below the TRD.			
4.7-1c Reclamation will initiate a 10-year mitigation monitoring program after the first growing season following project implementation. Monitoring and maintenance of planted vegetation will take place in the first several years after planting. After a period of 5 years, the need for additional riparian habitat and wetland enhancement will be evaluated in a written report. At that time, Reclamation, in consultation with the USACE, Regional Water Board, and CDFW, will determine whether there is a need to further enhance or create additional areas of riparian habitat or jurisdictional wetlands within			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
the project boundary so that there will be no net loss of wetlands at the end of a 5 year period and no net loss of riparian habitat after a 10-year monitoring period. In addition, wetlands will be re-delineated 5 years after project implementation to ensure no net loss of wetland habitat. Riparian habitat reporting 5 years after planting and wetland delineation 5 years after project implementation will provide Reclamation with needed data in a timely fashion to take additional pro-active measures towards meeting the goals of no net loss of riparian habitat and jurisdictional wetlands within boundaries established for TRRP rehabilitation sites after 10 years.			
Impact 3.7-4: Construction activities associated with the Proposed Project could result in impacts to the state-listed little willow flycatcher (*Empidonax traillii*).			
4.7-4a Prior to the start of construction, a qualified biologist will conduct a survey of the rehabilitation sites to determine whether suitable nesting habitat for the little willow flycatcher is present. If suitable habitat is present, Mitigation Measure 4.7-4b will be implemented.		Reclamation (implementation)	
4.7-4b Grading and other construction activities will be scheduled to avoid the nesting season to the extent possible. The nesting season for this species in Trinity County extends from June 1 through July 31. If construction occurs outside of the breeding season, no further mitigation is necessary. If the breeding season cannot be completely avoided, Mitigation Measures 4.7-4c and 4.7-4d will be implemented.			
4.7-4c A qualified biologist will conduct a minimum of one pre-construction survey for the little willow flycatcher within the rehabilitation sites and a 250-foot buffer around the sites. The survey will be conducted no more than 15 days prior to the initiation of construction in any given area. The pre-construction survey(s) will be used to ensure that no nests of this species within or immediately adjacent to the rehabilitation site will be disturbed during project implementation. To the extent possible given timing for construction and with the contract award, pre-construction surveys will conform to methodologies identified in a Willow Fly Catcher Survey Protocol for California available online at: http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html#Birds . If an active nest is found, CDFW will be contacted prior to the start of construction to determine the appropriate mitigation measures.			
4.7-4d If vegetation is to be removed by the projects and all necessary approvals have been obtained, potential nesting substrate (e.g., shrubs and trees) that will be removed by the projects will be removed before the onset of the nesting season, if feasible. This will help preclude nesting and substantially decrease the likelihood of direct impacts.			
Impact 3.7-5: Construction activities associated with the Proposed Project could result in impacts to the foothill yellow-legged frog (*Rana boylii*).			
4.7-5a If any construction in the Trinity River channel will occur prior to August 1 of any construction season, a pre-construction survey for the foothill yellow-legged frog larvae and/or eggs will be conducted by a qualified biologist. This survey will be conducted within the construction boundary no more than 2 weeks prior to the start of in-stream construction activities. If larvae or eggs are detected, the biologist will relocate them to a suitable location outside of the construction boundary.		Reclamation (implementation)	
4.7-5b In the event that a foothill yellow-legged frog is observed within the construction boundary, the			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
contractor will temporarily halt in-stream construction activities until qualified personnel have moved the frog(s) to a safe location within suitable habitat outside of the construction limits. Planned locations for placement of transferred animals will be downstream of the construction limits and will be reported to the CDFW prior to construction.			
4.7-5c Mitigation measures identified in Section 3.5 (Water Quality) of this EA/IS for addressing erosion and sedimentation and accidental spills will be fully implemented to mitigate for potential indirect impacts to dispersal habitat for the foothill yellow-legged frog due to sedimentation and accidental spills.			
4.7-5d Mitigation measures associated with the disturbance to riparian habitat (Mitigation Measures 4.7-1a, 4.7-1b, and 4.7-1c) will be fully implemented.			
Impact 3.7-6: Construction activities associated with the Proposed Project could result in impacts to the western pond turtle (*Actinemys marmorata pallida*).			
4.7-6a A minimum of one survey for western pond turtle nests will be conducted during the nesting season (generally late June-July) prior to construction. A qualified biologist will be retained by Reclamation to conduct the survey. If a western pond turtle nest is found, the biologist will flag the site and determine whether construction activities can avoid affecting the nest. If the nest cannot be avoided, the nest will be excavated by the biologist and reburied at a suitable location outside of the construction limits.		Reclamation (implementation)	
4.7-6b Prior to construction in open water habitat, a qualified biologist will trap and move western pond turtles out of the construction area to nearby suitable habitats.			
4.7-6c During construction, in the event that a western pond turtle is observed within the construction limits, the contractor will temporarily halt construction activities until qualified personnel have moved the turtle(s) to a safe location within suitable habitat outside of the construction limits. Planned locations for placement of transferred animals will be downstream of the construction limits and will be reported to the CDFW prior to construction.			
4.7-6d Mitigation measures presented in Section 4.5 (Water Quality) for addressing erosion and sedimentation and accidental spills will be fully implemented to mitigate for the potential indirect impacts to potential dispersal habitat due to sedimentation and accidental spills.			
4.7-6e The mitigation measure associated with the disturbance to riparian habitat (Mitigation Measures 4.7-1a, 4.7-1b, and 4.7-1c) will be fully implemented.			
Impact 3.7-7: Construction activities associated with the Proposed Project could result in impacts to nesting Vaux's swift (C*haetura vauxi*), California yellow warbler (*Dendroica petechia*), and yellow-breasted chat (*Icteria virens*).			
4.7-7a Prior to the start of construction, a qualified biologist will conduct surveys of the rehabilitation sites to determine whether suitable nesting habitat for the species is present. If suitable habitat is present, Mitigation Measure 4.7-7b will be implemented.		Reclamation (implementation)	
4.7-7b Grading and other construction activities will be scheduled to avoid the nesting season for these species to the extent possible. The nesting season for these species in Trinity County extends from			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
March 15 through July 31. If construction occurs outside the breeding season, no further mitigation is necessary. If construction during the breeding season cannot be completely avoided, Mitigation Measures 4.7-7c and 4.7-7d will be implemented.			
4.7-7c A qualified biologist will conduct a minimum of one preconstruction survey for these species within the rehabilitation sites and a 250-foot buffer around the sites. The survey will be conducted no more than 15 days prior to the initiation of construction in any given area. The preconstruction surveys will be used to ensure that no nests of these species within or immediately adjacent to the rehabilitation sites will be disturbed during project implementation. If an active nest is found, a qualified biologist will determine the extent of a construction-free buffer zone to be established around the nest.			
4.7-7d If vegetation is to be removed by the project and all necessary approvals have been obtained, potential nesting habitat (e.g., shrubs and trees) that will be removed by the projects will be removed before the onset of the nesting season, if feasible. This will help preclude nesting and substantially decrease the likelihood of direct impacts.			
Impact 3.7-8: Construction activities associated with the Proposed Project could result in impacts to nesting bald eagle (*Haliaeetus leucocephalus*) and northern goshawk (*Accipiter gentilis*).			
4.7-8a Prior to the start of construction, a qualified biologist will conduct a survey of the rehabilitation sites to determine whether suitable nesting habitat for the species is present. If suitable habitat is present, Mitigation Measure 4.7-8b will be implemented.		Reclamation (implementation)	
4.7-8b Construction will be scheduled to avoid the nesting season for bald eagles and northern goshawks to the extent feasible. The nesting season for most raptors in Trinity County extends from February 15 through July 31. Thus, if construction can be scheduled to occur between August 1 and February 14, the nesting season will be avoided and no impacts to nesting bald eagles and northern goshawks will be expected. If it is not possible to schedule construction during this time, mitigation measures 4.7-8c and 4.7-8d will be implemented.			
4.7-8c Pre-construction surveys for nesting northern goshawks will be conducted by a qualified biologist to ensure that no nests will be disturbed during project implementation. These surveys will be conducted no more than 14 days prior to the initiation of construction activities. During this survey, the biologist will inspect all trees immediately adjacent to the impact areas for bald eagle and northern goshawk nests. If an active nest is found within 500 feet of the construction areas to be disturbed by these activities, the biologist, in consultation with the CDFW, will determine the extent of a construction-free buffer zone to be established around the nest.			
4.7-8d If vegetation is to be removed as part of the project and all necessary approvals have been obtained, potential nesting habitat (i.e., trees) that will be removed by the projects will be removed before the onset of the nesting season, if feasible. This will help preclude nesting and substantially decrease the likelihood of direct impacts.			
Impact 3.7-9: Construction activities associated with the Proposed Project could result in impacts to special status bats and the ring-tailed cat (*Bassariscus astutus*).			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
4.7-9a Pre-construction surveys for roosting bats and ring-tailed cats will be conducted prior to the start of construction activities. The surveys will be conducted by a qualified biologist. No activities that will result in disturbance to active roosts of special status bats or dens of ring-tailed cats will proceed prior to completion of the surveys. If no active roosts or dens are found, no further action is needed. Because bats are known to abandon young when disturbed, if a maternity roost is located, a qualified bat biologist will determine the extent of a construction-free zone to be implemented around the roost. If a bat maternity roost or hibernaculum is present, or a ring-tailed cat den is present, Mitigation Measures 4.7-9b and/or 4.7-9c will be implemented. CDFW will also be notified of any active bat nurseries within the disturbance zones.		Reclamation (implementation)	
4.7-9b If an active maternity roost or hibernaculum is found, the projects will be redesigned to avoid the loss of the tree or structure occupied by the roost, if feasible. If the projects cannot be redesigned to avoid removal of the structure, demolition of that structure will commence before bat maternity colonies form (i.e., prior to March 1) or after young are volant (flying) (i.e., after July 31). The disturbance-free buffer zones described above will be observed during the bat maternity roost season (March 1–July 31). If a non-breeding bat hibernaculum is found in a tree or structure to be razed, the individuals will be safely evicted under the direction of a qualified bat biologist, by opening the roosting area to allow air to flow through the cavity. Demolition will then follow no sooner than the following day (i.e., there will be no less than one night between initial disturbance for air flow and the demolition). This action will allow bats to leave during dark hours, thus increasing their chance of finding new roosts with a minimum of potential predation during daylight. Trees with roosts that need to be removed will first be disturbed at dusk, just prior to removal that same evening, to allow bats to escape during the darker hours.			
4.7-9c Ring-tailed cats are fully protected species under Fish and Game Code Section 4700. Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research. If an active ring-tailed cat nest is found, the projects will be redesigned to avoid the loss of the tree occupied by the nest if feasible. If the projects cannot be redesigned to avoid removal of the occupied tree, the CDFW will be contacted for their input. If approved by CDFW, demolition of the tree will commence outside of the breeding season (February 1 to August 30). If a non-breeding den is found in a tree scheduled to be removed, prior to disturbance, the CDFW will be notified to review and approve proposed procedures to ensure that no take occurs as a result of the action. Trees with dens that need to be removed will first be disturbed at dusk, just prior to removal that same evening, to allow ring-tailed cats to escape during the darker hours.			
Impact 3.7-11: Construction activities associated with the proposed project could result in impacts to BLM and USFS sensitive species (Pacific fisher).			
Mitigations measures identified previously would reduce impacts to BLM and USFS sensitive species to less than significant. Mitigation measures 4.7-4a, 4.7-4b, and 4.7-4c would reduce impacts to the little willow flycatcher to a less than significant level. Mitigation measures 4.7-5a, 4.7-5b, 4.7-5c, and 4.7-5d		Reclamation (implementation)	

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
would reduce the impacts to the foothill yellow-legged frog to a less than significant level. Mitigation measures 4.7-6a, 4.7-6b, 4.7-6c, and 4.7-6d would reduce the impacts to the western pond turtle to a less than significant level. Mitigation measures 4.7-8a, 4.7-8b, and 4.7-8c would reduce the impacts to the northern goshawk to a less than significant level. Mitigation measures 4.7-9a and 4.7-9b would reduce impacts to special status bats and the ring-tailed cat to less than significant.			
Impact 3.7-13: Implementation of the proposed project could result in the spread of non-native and invasive plant species.			
4.7-13a When using imported erosion control materials (as opposed to rock and dirt berms), use only certified weed-free materials, mulch, and seed.		Reclamation (implementation)	
4.7-13b Preclude the use of rice straw in riparian areas.			
4.7-13c Limit any import or export of fill to materials to those that are known to be weed free.			
4.7-13d Ensure all construction equipment is thoroughly washed prior to entering and leaving the worksite. Equipment will be inspected to ensure that it is free of plant parts as well as soils, mud, or other debris that may carry weed seeds.			
4.7-13e Use a mix of native grasses, forbs, and non-persistent non-native species for seeding disturbed areas that are subject to infestation by non-native and invasive plant species. Where appropriate, a heavy application of mulch will be used to discourage introduction of these species. Use of planting plugs of native grass species may also be used to accelerate occupation of disturbed sites and increase the likelihood of reestablishing a self-sustaining population of native plant species.			
4.7-13f Within the first 3 to 5 years post-project, if it is determined that the project has caused non-native invasive vegetation to out-compete desired planted or native colonizing riparian vegetation, opportunities to control these non-native species will be considered. When implementing weed control techniques, the approach will consider using all available control methods known for a weed species.			
4.7-13g Within the first 3 to 5 years post-project, if it is determined that on-site revegetation/post-project conditions do not meet landowner requirements, opportunities to revisit the site and remedy the concern will be considered.			
3.8 Recreation			
Impact 3.8-1: Construction associated with the proposed project could disrupt recreation activities such as boating, fishing, and swimming in the Trinity River.			
4.8-1a Reclamation shall provide precautionary signage to warn recreational users of the potential safety hazards associated with project construction activities. Signs and/or buoys shall be placed within and directly adjacent to the project boundaries along the Trinity River in accordance with the requirements specified in Title 14, Article 6 of the California Code of Regulations. Notification signs shall be posted at public river access areas located within the project area and managed by BLM. Additionally, public notification of proposed project construction activities and associated safety hazards shall be circulated in the local *Trinity Journal* newspaper prior to the onset of project construction.		Reclamation (implementation)	

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
4.8-1b Reclamation will repair and/or replace any facilities associated with the Proposed Project that are impacted by project activities. This measure includes installation of interpretive signage consistent with the requirements of the BLM. Preconstruction meetings between Reclamation and landowners/land managers will identify the amount of vegetative screening to be retained at each recreation site within the project area.			
Impact 3.8-2: Construction of the proposed project could result in an increased safety risk to recreational users or resource damage to lands within the project boundaries.			
Implementation of Mitigation Measures 4.8-1a and 4.8-1b described above would make this impact less than significant.		Reclamation (implementation)	
Impact 3.8-3: Construction activities associated with the proposed project could lower the Trinity River's aesthetic values for recreationists by increasing its turbidity.			
Mitigation measures 4.5-1a, 4.5-1b, 4.5-1c, 4.5-1d, and 4.5-1e described above for impact 3.5-1 would reduce impacts to less than significant.			
3.10 Cultural Resources			
Impact 3.10-2: Implementation of the proposed project could potentially result in disturbance of undiscovered prehistoric or historic resources.			
4.10-2a Prior to initiation of construction or ground-disturbing activities, all construction workers will be alerted to the possibility of discovering cultural resources. This includes prehistoric and/or historic resources. Personnel will be instructed that upon discovery of buried cultural resources, work within 50 feet of the find will be halted and Reclamation's designated archaeologist will be consulted. Once the find has been identified, Reclamation will be responsible for developing a treatment plan for the cultural resource including an assessment of its historic properties and methods for avoiding any adverse effects, pursuant to the PA and in compliance with the NHPA.		Reclamation (implementation)	
4.10-2b If human remains are encountered during construction on non-federal lands, work in that area will be halted and the Trinity County Coroner's Office will be immediately contacted. If the remains are determined to be of Native American origin, the Native American Heritage Commission (NAHC) will be notified within 24 hours of determination, as required by PRC, Section 5097. The NAHC will notify designated Most Likely Descendants, who will provide recommendations for the treatment of the remains within 24 hours. The NAHC will mediate any disputes regarding treatment of remains. If Native American human remains and associated items are discovered on federal lands, they will be treated according to provisions set forth in the Native American Protection and Repatriation Act (25 USC 3001) as well as Reclamation's Directives and Standards LND 02-01. If the find is determined to be a historical resource or a unique archaeological resource, as defined by CEQA, contingency funding and a time allotment sufficient to allow for implementation of avoidance measures or other appropriate mitigation will be made available. Work may continue on other parts of the project while mitigation for historical or unique archaeological resources takes place.			
3.11 Air Quality			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
Impact 3.11-1: Construction activities associated with the proposed project could result in an increase in fugitive dust and associated particulate matter (PM_{10} and $PM_{2.5}$) levels.			
4.11-1a Reclamation will implement a dust control program to limit fugitive dust and particulate matter emissions. The dust control program will include the following elements as appropriate: • Inactive construction areas will be watered as needed to ensure dust control. • Pursuant to the California Vehicle Code (Section 23114), all trucks hauling soil or other loose material to and from the construction site will be covered or will maintain adequate freeboard to ensure retention of materials within the truck's bed (e.g., ensure 1-2 feet vertical distance between top of load and the trailer). • Excavation activities and other soil-disturbing activities will be conducted in phases to reduce the amount of bare soil exposed at any one time. Mulching with weed-free materials will be used to minimize soil erosion, as described in Section 3.3, Geology, Fluvial Geomorphology, and Soils, and Section 3.5, Water Quality. • Watering (using equipment and/or manually) will be conducted on all stockpiles, dirt/gravel roads, and exposed or disturbed soil surfaces, as necessary, to reduce airborne dust. • All paved access roads, parking areas, and staging areas will be swept (with water sweepers), as required by Reclamation. • Paved roads will be swept (with water sweepers) if visible soil material is carried onto adjacent private and public roads, as required by Reclamation. • All ground-disturbing activities with the potential to generate dust will be suspended when winds exceed 20 mph, as directed by the NCUAQMD. • Reclamation or its contractor will designate a person to monitor dust control and to order increased watering as necessary to prevent transport of dust offsite. This person will also respond to citizen complaints.		Reclamation (implementation)	
Impact 3.11-2: Construction activities associated with the proposed project could result in an increase in construction vehicle exhaust emissions.			
4.11-2a Reclamation will comply with NCUAQMD Rule 104 (4.0) Particulate Matter. This compliance could occur by using portable internal combustion engines registered and certified under the state portable equipment regulation (Health & Safety Code 41750 through 41755).		Reclamation (implementation)	
Impact 3.11-3: Construction activities and removal of vegetation associated with the proposed project could result in vegetative waste materials that managers may decide to burn.			
4.11-3a Vegetative piles to be burned will consist only of dried vegetative materials. Burn piles will be no larger than 10 feet in diameter. Field personnel will be on site during all hours of burning, and materials necessary to extinguish fires will be available at all times.		Reclamation (implementation)	
4.11-3b In general, all requirements of a NCUAQMD "NON-Standard" burn permit will be met for burning. Burn management planning will include but not be limited to the following: • Ensure that burning occurs only on approved burn days as defined by the NCUAQMD (determined by calling 1-866-BURN-DAY).			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
• Burning will only occur during suitable conditions to ensure control of ignited fires. For instance, water to wet the litter and duff layer and penetrate the mineral soil layer to 1/4 inch or more will be present, wind speeds will be low (<10 mph), and temperature will be low (<80 ºF). • Piles will be covered with a 5-foot x 5-foot sheet of 4-mil polyethylene plastic to promote drying of the slash. At least 3/4 of each pile surface will be covered and the plastic anchored to preserve a dry ignition point. Dry fuel conditions will minimize smoke emissions. • Slash piles will not be constructed on logs, stumps, or talus slopes within 25 feet of wildlife trees with nest structures, in roadways, or in drainage ditches. Piles will not be placed within 10 feet of trees intended to be saved (reserved trees) or within 25 feet of a unit boundary.			
4.11-3c Reclamation will notify the public each day that burning is to occur. Signs or personnel will notify residents and traffic on nearby access routes.			
Impact 3.11-5: Construction activities would generate short-term and localized fugitive dust, gas, and diesel emissions, and smoke that could affect adjacent residences and schools.			
4.11-5a Construction activity occurring within 300 feet of elementary schools will be limited to the period when school is not in session.		Reclamation (implementation)	
4.11-5b Construction activity occurring within 300 feet of residences will be limited to Monday through Saturday, from the hours of 9 a.m. to 5 p.m.			
4.11-5c Reclamation will notify residences within 300 feet of the site and project activity and elementary schools will be notified of construction activity located near the school prior to site construction activities.			
4.11-5d Reclamation will ensure that a notice is posted at/adjacent to the rehabilitation site, which contains a phone number for the public to contact for concerns related to air quality.			
3.12 Aesthetics			
Impact 3.12-1: Implementation of the proposed project could result in the degradation and/or obstruction of a scenic view from key observation areas.			
Implementation of mitigation measures 4.7-1a, 4.7-1b, and 4.7-1c and 4.8-3a, 4.8-3b, 4.8-3c, 4.8-3d, 4.8-3e, and 4.8-3f described above will reduce the impacts to visual resources to less than significant.		Reclamation (implementation)	
3.14 Noise			
Impact 3.14-1: Construction activities associated with the proposed project would result in noise impacts to nearby sensitive receptors.			
4.14-1a Construction activities near residential areas will be scheduled between 7:00 a.m. and 7:00 p.m., Monday through Saturday. No construction activities will be scheduled for Sundays or other hours and days established by the local jurisdiction (i.e., Trinity County). The contractor may submit a request for variances in construction activity hours, as needed.		Reclamation (implementation)	
4.14-1b Reclamation will require that all construction equipment be equipped with manufacturer's specified noise muffling devices.			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
4.14-1c Reclamation will require placement of all stationary noise-generating equipment as far away as feasibly possible from sensitive noise receptors or in an orientation minimizing noise impacts (e.g., behind existing barriers, storage piles, unused equipment).			
3.15 Public Services and Utilities/Energy			
Impact 3.15-3: Implementation of the proposed project could result in disruption to emergency services, school bus routes, or student travel routes during construction activities.			
4.15-3a Reclamation will require that staging and construction work, including temporary road or bridge closures occurs in a manner that allows for access by emergency service providers.		Reclamation (implementation)	
4.15-3b Reclamation will provide 72-hour notice to the local emergency providers and affected users prior to the start of temporary closures.			
4.15-3c Reclamation will coordinate road closures occurring during the school year (mid-August through mid-June) with the appropriate school districts to avoid disruption of school attendance and student access to bus service.			
3.16 Transportation/Traffic Circulation			
Impact 3.16-2: Construction activities would generate short-term increases in vehicle trips.			
4.16-2a Reclamation will post signs during gravel haul activities notifying travelers of trucks entering the roadway. Reclamation will ensure that the gravel trucks maintain a speed limit of 15 mph on residential roads and private roads and operate only between the hours of 7 a.m. and 7 p.m., Monday through Saturday.			
Impact 3.16-4: Construction activities would increase wear and tear on local roadways.			
4.16-4a Reclamation will perform a pre-construction survey of local federal and state roads to determine the existing roadway conditions of the construction access routes, and will consult with the relevant agencies/private parties about road conditions prior to construction activity and post construction activity. An agreement will be entered into prior to construction that will detail the pre-construction conditions and post-construction requirements for potential roadway rehabilitation.		Reclamation (implementation)	
Impact 3.16-5: Construction activities could pose a safety hazard to motorists, bicyclists, pedestrians, and equestrians.			
4.16-5a Reclamation will prepare and implement a traffic control plan that will include provision and maintenance of temporary access through the construction zone, reduction in speed limits though the construction zone, signage and appropriate traffic control devices, illumination during hours of darkness or limited visibility, use of safety clothing/vests to ensure visibility of construction workers by motorists, and fencing as appropriate to separate bicyclists, pedestrians, and equestrians from construction activities. . Reclamation will obtain an encroachment permit from Caltrans to work within the SR-299 easement, and from Trinity County within the Lower Steiner Flat Road easement. These permits will require traffic control and signage to meet California state standards.		Reclamation (implementation)	

Project Design Elements

Project design elements are specific design features proposed by the project applicant and incorporated into the project to prevent the occurrence of, or reduce the significance of potential environmental effects. Because project design elements have been incorporated into the project, they do not constitute mitigation measures as defined by CEQA. However, project design elements are identified to ensure that they are included in the MMRP to be developed and implemented as part of the Proposed Project. The design elements discussed below are common to the Proposed Project. These elements are excerpted from Chapter 2 of the Draft Master EIR.

Description of Common Activities and Construction Criteria and Methods

Common Activities

VEGETATION REMOVAL

Vegetation removal would involve the following:

- Remove vegetation to provide access to activity areas using a combination of manual labor and heavy equipment (i.e., chainsaw, excavator, and vegetation masticator).
- Remove stumps, roots, and vegetative matter to allow river scour on excavated floodplain surfaces. Some LWD would be retained for use in the floodplain to enhance fish habitat.
- Dispose of removed vegetation by chipping, hauling offsite, burning, burying within spoil areas, or other appropriate methods. Reclamation would continue to work with local agencies to encourage the efficient use of chipping as a priority method of disposing of vegetative waste.
- Protect vegetation designated for preservation within clearing limits. Vegetation outside the clearing limits would be preserved and protected.
- Mechanically remove submerged roots from river fringe areas with ripping bars or excavator buckets. Equipment chassis (i.e., tires, tracks) would remain outside of the wetted portion of the river channel when removing submerged roots.

WATER USE

Water would be used at all sites, in accordance with the following:

- Riparian water rights held by public and private landowners on the Trinity River would be used to obtain Trinity River water to support restoration. Dust abatement water would be obtained from on-site seep wells or the Trinity River. When drafting from the Trinity River, pump intakes would be in conformance with criteria established by NMFS and CDFW to prevent impacts to aquatic organisms. Make-up water pumped from the river would pass through a screen at the inlet with maximum ¼-inch openings and a maximum intake velocity of 0.8 feet per second (fps).
- In the event irrigation is necessary for revegetation efforts, the primary water source would be the Trinity River. Any surface water sources used for irrigation would be developed in order to comply with the water rights of land management agencies and landowners. Pump intakes would be in conformance with criteria established by NMFS and CDFW to prevent impacts to aquatic organisms. Make-up water pumped from the river would pass through a screen at the inlet with maximum ¼-inch openings and a maximum intake velocity of 0.8 fps.

MONITORING

The ROD provided a restoration strategy for the TRRP but did not identify methods for assessing the effectiveness of the management actions in achieving TRRP goals or management targets. Instead, it directed the TRRP to organize assessments around the principles of AEAM and to use this to rigorously assess the river's response to management actions. The Integrated Assessment Plan (IAP) provides the basis for applying the AEAM principles outlined in the ROD.

These principles would be applied to quantitatively determine the overall status and trend of river system attributes relative to TRRP objectives, using appropriate data to describe each attribute, with data collected based upon scientifically defensible monitoring designs. The causal relationship between rehabilitation of the fluvial nature of the river and increasing salmonid production would be the major focal point for monitoring and modeling. The focus of the IAP is to identify key assessments that:

- Evaluate long-term progress toward achieving program goals and objectives; and
- Provide short-term feedback to improve program management actions by testing key hypotheses and reducing management uncertainties.

The IAP provides a general framework for integrating and linking assessments across monitoring domains. Integration of assessments would be essential for evaluating the TRRP's overall restoration strategy, involving coordinated actions to support multiple ecosystem processes and components. This integration allows development of coordinated sampling designs and assessments that serve multiple or complementary objectives, and is intended to improve the understanding of qualitative and quantitative functional relationships associated with the mainstem Trinity River.

The IAP framework focuses on six key elements; each of these would be integrated into the Mitigation Monitoring and Reporting Plan (MMRP) to ensure that authorized activities are consistent with the AEAM. Key elements of the IAP include:

1. Create and maintain spatially complex channel morphology.
2. Increase/improve habitats for freshwater life stages of anadromous fish to the extent necessary to meet or exceed production goals.
3. Restore and maintain natural production of anadromous fish populations.
4. Restore and sustain the natural production of anadromous fish populations downstream of Lewiston Dam to pre-dam levels to facilitate dependent tribal, commercial, and sport fisheries' full participation in the benefits of restoration via enhanced harvest opportunities.
5. Establish and maintain riparian vegetation that supports fish and wildlife.
6. Rehabilitate and protect wildlife habitats and maintain or enhance wildlife populations following implementation.

Additional information on the IAP is available on the TRRP website:
http://www.trrp.net/science/IAP.htm

Design Elements

Attachment 1 following the appendices in Volume IV of the Trinity River Master EIR is a glossary of design and construction terms for use by the design team.

HYDRAULICS

The Proposed Project would occur in areas that FEMA has designated as Special Hazard Zones AE and X, as described in Section 3.2 of this document. In the Zone AE areas, Reclamation has established a design criterion stating that not only would the County's floodplain ordinance be followed, but implementation of the Proposed Project would not increase the flood risk for the community. This criterion resulted in a stipulation that coarse sediment and excavated material would be strategically placed to ensure that 100-year flood elevations would not increase over current conditions. As previously described, the site boundaries generally conform to the river corridor, bounded by prominent geographic features such as roads and fences.

The design of the activity areas was based on an understanding of the relationships between the flow regime and the hydrologic/hydraulic characteristics of the action. A fundamental constraint was to *do nothing to increase the flood risk in the general vicinity, and to not raise the water surface elevation above the current FEMA estimated 100-year base flood elevation.* Evaluation of the Proposed Project requires comparing estimated seasonal base flows and estimated return-period flows. USACE's Hydraulic Engineering Center River Analysis System (HEC-RAS) hydraulic model would be used by the design team during final design activities to predict changes in flood elevations at various points along the project reach. Table A-2 lists the components of the flow regime, the seasonal or other periodic return intervals, and the flow rates that would be used during final design to ensure that the action meets the flood constraints described above.

Table A-2. Estimated Mainstem Trinity River Flow Conditions Used for Design.

FLOW DESCRIPTION	FLOW EVENT	FLOW RATE (CFS)
Summer base flow[a] (July 22 to October 15 of each year)	Q_s	450
1.5-year return interval design flow	$Q_{1.5}$	6,000
Estimated FEMA 100-year flow below Rush Creek	Q_{100}	19,300
Estimated FEMA 100-year flow below Grass Valley Creek	Q_{100}	23,600

[a] Base flow defined as cfs from TRD release and accretion flow
Q=return interval

A HEC-RAS model for the Trinity River from Lewiston Dam to the North Fork Trinity River was developed by California DWR and provided to the TRRP as part of the administrative record. This model was calibrated to match measured water surface elevations (WSEs) in the Trinity River within and adjacent to the site boundaries for the design flow. Since WSEs have not been measured (validated) for the 100-year flow, the predicted WSEs are based on the output of the model using carefully selected Manning's "n" values that reflect the overbank conditions at each site. The model incorporates empirical data from surveyed cross-sections, including bathymetric and overbank/floodplain topography in the general vicinity of the rehabilitation sites. To obtain WSEs for design flows, the model was calibrated using surveyed WSEs and known flows (from gage data). The model was determined to be accurate for the level of evaluation and design required.

There are several significant flow conditions that are important to the design of the Proposed Project. Two of the most important flow conditions are summertime low flows of about 450 cfs, which is the release from Lewiston Dam, and the 1.5-year-event (ordinary high water) flow of 6,000

cfs, as measured below Rush Creek. The design team regards the design flows portrayed in Table A-1 as the "best available information" per FEMA requirements. The FEMA Q100 "near Douglas City" (38,500 cfs) was established in the 1976 USACE report (USACE 1976) used by FEMA to develop the current FIRMs for the Trinity River. The 6,000 cfs 1.5-year event is based on the ROD flow release. This flow information provides the basis for the designs incorporated into the Proposed Project.

The HEC-RAS hydraulic model was developed and calibrated for the existing conditions to calculate the WSE at various flow releases. The calibration was based on water-surface profiles surveyed at low flow and water profiles and points surveyed at different flows, ranging from 4,500 cfs to 10,000 cfs releases from Lewiston Dam. After the model was properly calibrated, various WSEs were determined for the activity areas and used to develop the design topography. The illustrations at the end of this chapter portray the design topography concepts. The final designs would ensure that constructed surfaces are self-draining in order to minimize potential fish stranding.

ROADWAY APPROACHES

As an alternative to disposing of excavated materials onsite, materials may be hauled to commercially approved off-site locations. This option would reduce the impact of spoiling excavated materials in upland habitats. Hauling a portion of excavated materials generated under the Proposed Project could require substantial truck traffic to off-site locations. The traffic would be staged over the project duration, generally between August 1 and November 15. Traffic control measures would be applied in accordance with BLM, Trinity County, and Caltrans requirements.

RECREATION FACILITIES

As appropriate, recreation facilities (e.g., parking areas, access trails, picnic areas) affected by project activities would be returned to the same level of service as those offered prior to project implementation. Reclamation, in consultation with the BLM, California DWR, and CDFW, could enhance one or more of these facilities consistent with project objectives. Examples of enhancement could be updated signage, surfacing of trails or parking areas with permeable materials, improvements to fishing access locations or establishment of interpretive features intended to increase public awareness of the ongoing efforts to restore the Trinity River.

DRAINAGE

As appropriate, culverts or other drainage structures would be constructed at temporary stream crossings or cross-drainage channels to allow for unimpeded surface drainage.

RIGHTS-OF-WAY/EASEMENTS

Prior to construction, formal realty agreements would be made between Reclamation; land managers for BLM, California DWR, and CDFW; and private landowners whose property would be affected. These agreements would clarify the terms and conditions under which Reclamation would work on private property. In addition, these agreements would compensate landowners, based on fair market value of identified construction easements, and would hold property owners harmless during construction activities.

UTILITIES

There are a number of utility features located within and/or adjacent to the site boundaries. Water intakes, power and telephone poles, and water supply lines parallel or cross the Trinity River in a number of locations. These utilities are considered in the project design to ensure that service would not be disrupted.

Construction Criteria and Methods

CONSTRUCTION PROCESS OVERVIEW

- Vegetation removal would occur as necessary and in compliance with all regulatory requirements. An expected August 1 start date for clearing and grubbing of vegetation would allow completion of nesting by avian species. Alternatively, vegetation may be removed prior to the start of the nesting season, which is early March for this area.
- Where available, existing roads (activity M) would be used to access the activity areas. New access roads (activity N) and haul routes would be constructed when necessary and restored to a stable condition in accordance with landowner requirements at the completion of the project.
- Excavation would begin on the floodplain to bring it down to grade.
- When specified, finer grained materials (e.g., sand) excavated from riverine activity areas may be stockpiled for use at upland or other riverine activity areas.
- Any riverine treatment areas (e.g., constructed inundation surfaces) that have been compacted from construction activities would be ripped to a depth of approximately 18 inches. The furrows developed by this ripping would ensure that most storm water runoff is retained and filtered on-site so that there is little or no construction-related turbidity. This action would effectively control the release of storm water runoff and turbidity from the site and eliminate the need for use of post-construction sediment-control measures (e.g., silt fences, berms).
- The timing for work adjacent to the river may be affected by river flows. If for some reason the flow is low when construction starts, but it is anticipated that flows would increase before the floodplain can be excavated, excavation would occur at the lower elevations (adjacent to river) first and at the higher floodplain elevations last.
- In-channel activities would generally take place during low flows (July 15 to September 15 as allowed by the coho salmon in-river work window in NMFS' 2000 Trinity River biological opinion) to create immediate point bars and allow mobilization of in-channel materials at high flows.
- Alcoves and side channels would be constructed from the existing grade down slope. Measures would be taken (e.g., sediment plug, sandbags) to isolate the work area from flowing water. If necessary, pumps would be used to dewater the excavation to inhibit any sediment from entering the river. Typically, reconnecting these features to the river relies on high-flow events. If necessary, the TRRP would remove materials used to isolate these side channels after they have been constructed.
- Final grading would occur as necessary for all activity areas.
- Demobilization of construction equipment and site clean-up would be accomplished consistent with Reclamation requirements.

- Revegetation would take place during wet conditions (fall/winter) and would generally occur in riparian areas to maximize use by fish and wildlife species. Projects would be designed and implemented to achieve no net loss in riparian vegetation (within the project site boundaries) from planting and natural revegetation consistent with the Draft Riparian Revegetation Plan.

IN-RIVER CONSTRUCTION

- Where necessary, heavy equipment would be used to grub tree and shrub roots from the edge of the river. Vegetation would often be maintained along the river's active channel to maintain the currently available low-water fish habitat. During root removal, equipment chassis would generally not enter the low-water river channel.
- In-river excavation would generally begin at the far edge of the activity area and work back toward the riverbank so that heavy equipment is on dry land or in shallow water.
- In-river materials or coffer dams may be used to temporarily redirect flow around work areas and to create platforms from which to work. In addition to providing the means for volitional fish passage (upstream and downstream), at least one navigable (by raft/boat) passage through the activity area would remain open at all times.

TRAFFIC CONTROL/DETOUR

Short-term traffic control is expected and would be in conformance with the following requirements established by the appropriate jurisdictional authority for mobilization and demobilization of heavy equipment or wide-load vehicles:

- Reclamation would coordinate with jurisdictional agencies to identify specific requirements that shall be included for use of existing roadways and haul routes. Requirements may include seasonal or other limitations or restrictions, payment of excess size and weight fees, and posting of bonds conditioned upon repair of damage.
- Temporary construction access may be required; access routes shall be of a width and load-bearing capacity to provide unimpeded traffic for construction purposes.

STAGING AREAS

Staging areas and storage facilities for the Proposed Project are shown on Figures 4 and 5. These areas would be used throughout the duration of the project activities. Some short-term staging and equipment storage and parking would be needed in the activity areas as the project is implemented.

AIR POLLUTION AND DUST CONTROL

Efforts would be made to minimize air pollution and reduce greenhouse gas emissions related to construction operations. Reclamation specifications require that the contractor comply with all applicable air pollution control rules, regulations, ordinances, and statutes. In addition, project contractors would be given educational material about fuel efficiency and the benefits of using vehicles powered by alternative energy sources to enhance awareness of global warming issues. Contractors would also be required to provide recycling bins for on-site waste materials.

Contract documents would also specify that the contractor would be responsible for limiting dust by watering construction site areas used by trucks and vehicles. If water is taken from the river, pump intakes would be in conformance with criteria established by NMFS and CDFW to prevent impacts to aquatic organisms. Make-up water pumped from the river would pass through a screen at the inlet with maximum ¼-inch openings and a maximum intake velocity of 0.8 fps.

FIRE PROTECTION AND PREVENTION

Due to the high fire hazard and history of equipment-caused fires in Trinity County, construction contractors would be required to follow applicable regulations of Public Resource Code 4428-4442 during dry periods to minimize the potential for the initiation and spread of fires from the work site.

WATER POLLUTION PREVENTION

Reclamation would implement water pollution control measures that conform to applicable and appropriate permits. Reclamation would require the contractor to use extreme care to prevent construction dirt, debris, storm water run-off, and miscellaneous byproducts from entering the stream. Some key water pollution control measures that would be implemented by Reclamation are listed below:

- Every reasonable precaution would be exercised and BMPs would be implemented to protect the Trinity River from being polluted by fuels, oils, petroleum byproducts, and other harmful materials and shall conduct and schedule operations to avoid or minimize muddying and silting of the river. Care shall be exercised to preserve roadside vegetation beyond the limits of construction.
- Construction equipment would be cleaned of dirt and grease prior to any in-channel activities. All construction equipment would be inspected daily and maintained to ensure that fuel or lubricants do not contaminate the Trinity River. Spill containment kits would be onsite at all times and, where feasible, berms or other containment methods would be kept in place around the work areas when performing in-channel work.
- Water pollution control work is intended to provide prevention, control, and abatement of water pollution in the Trinity River, and would consist of constructing those facilities that may be shown on the plans, specified herein or in the special provisions, or directed by the Contracting Officer.
- Furrowing of riparian areas that have been compacted during construction activity is expected to minimize or stop delivery of storm water runoff to the river. As necessary, Reclamation would provide temporary water pollution control measures, including, but not limited to, dikes, basins, ditches, and straw and seed application, that may become necessary as a result of the contractor's operations.
- Before starting any work on the project, Reclamation would develop an agency-approved SWPPP to effectively control water pollution during construction of the project. The SWPPP would show the schedule for the erosion control work included in the contract and for all water pollution control measures Reclamation proposes to take in connection with construction of the project to minimize the effects of the operations on adjacent streams and other bodies of water. Reclamation would not perform any clearing and grubbing or earthwork on the project until the SWPPP has been accepted by responsible agencies.
- Oily or greasy substances originating from Reclamation's operations would not be allowed to enter, or be placed where they would later enter, a live stream, soil, or groundwater.